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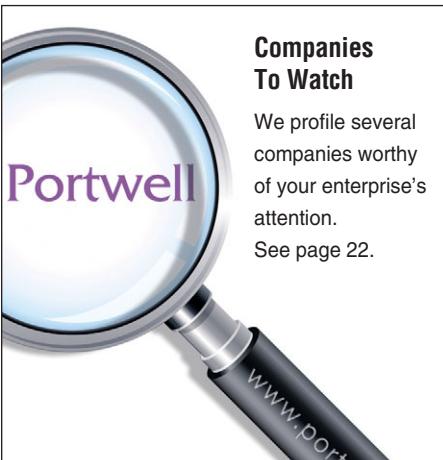
COVER FOCUS

Cost-Cutting Tips

Although the industry seems to be headed in a more positive direction, data center/IT managers need to always be on the lookout for ways to cut costs. We provide tips for doing so in several areas.

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Storage Savings

Safely Cut Costs While Still Maintaining Uptime & Data Retention

by William Van Winkle

ONE MORNING RECENTLY, CMS Products' Gary Streuter went to pick up his dry cleaning. When he reached the cleaners, he found a customer line snaking out the door. It turned out that the hard drive in the company's server had crashed during the night. People were rummaging through the racks searching for their clothes, and those lucky enough to find them had to pay with cash because credit card processing was tied to the same system.

"Needless to say, the owner of that business had a very bad day," says Streuter, vice president of marketing for CMS (www.cmsproducts.com). "Moral of the story: If he'd had a redundant system disk . . . he could have rebooted his server and got through the day."

This tale illustrates one of the several facets of cutting storage-related costs: Sometimes a business has to spend money to save money. A single-server backup solution might cost a few hundred dollars, but that number pales in comparison to



the potential losses caused by even a single day of storage failure. There are two sides to the storage cost savings coin. One side is about business continuity, highlighted by this dry cleaner's example. The flip side tends to get more attention: focusing on how companies can get by with less hardware.

Key Points

- Popular storage cost-saving approaches, such as cloud services, may still carry unforeseen expenses, such as increased downtime during a post-disaster restoration.
- Many companies still resist hierarchical storage and place all of their data in one tier; however, tiered storage systems can offer significant cost savings.
- Storage cost savings must be implemented holistically. Attacking only one area of waste or inefficiency will usually not yield major or sustainable benefits.

Keep Cloud Considerations In Mind

Many companies are turning to cloud-based services as a way to trim down storage expenses, and there's plenty to admire in this new model. Because cloud services generally operate under a shared infrastructure design, component, infrastructure, and service costs get spread across a broad user base, lowering average costs per customer when the conditions are appropriate. Whether the cloud makes sense for some or most of an enterprise's storage needs will depend on TCO estimates. Info-Tech Research notes in its

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Pumping Up The Heat

Is Raising Data Center Temps Risky Business?

by Chris A. MacKinnon

SINCE ASHRAE ADJUSTED its temperature standards and specifications, many enterprises are listening and responding by raising their data center temperatures. But some are hesitant and skeptical because of the potential risks and concerns involved (including overheating and humidity levels). One of the biggest questions is: Will raising the temperature as a way to lower costs increase costs in other areas? At any

rate, for ASHRAE, it's all about reducing energy consumption.

Warm Savings

Michael Sigourney, senior product specialist at AVTECH (www.avtech.com), says many IT managers are taking a look at running warmer data centers because studies from ASHRAE and others (such as Google) claim that it can be more economical to replace IT components more frequently because they fail due to environmental

Key Points

- Most IT equipment vendors agree that if the air at the cool air inlet of a device is 80 F, it will provide sufficient cooling.
- ASHRAE says temperature risks will vary on a case-by-case basis, so each data center should implement full engineering research to fully understand the risks.
- ASHRAE's allowable range for RH (relative humidity) is 20 to 80%. Keep humidity high enough to avoid static electricity problems and low enough to avoid electrical problems (caused by excessive moisture).

stress. The benefit here, they say, is not paying larger ongoing power costs.

According to Herman Chan, director of Raritan's Power Management Solutions group (www.raritan.com), all IT equipment vendors agree that air 80 degrees Fahrenheit

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Also In This Issue...

News

STORAGE

■ Solid-state drives are a hot topic for consideration. One of the simplest areas to implement SSDs is right in the server itself page 28

■ Although sophisticated technology at cloud providers can serve up high levels of storage optimization, clouds aren't exempt from data loss page 29

■ Product Spotlight: Storage Encryption page 30

SECURITY

■ From its beginnings in 2001, Austin, Texas-based network security provider TippingPoint, now part of HP, has focused on network security page 32

■ One of IT's most important responsibilities—security—often suffers from a lack of meaningful metrics .. page 33

■ Radware is now fielding the sole IPS/NBA/DoS mitigation appliance on the market page 33

MESSAGING & TELEPHONY

■ Product Spotlight: VoIP Phone Systems page 34

■ When CuDerm relocated its offices last year, the company also moved to a hosted VoIP and unified communications managed service provided by Cypress Communications page 36

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CLIENTS

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■ Tangent provides virtualized desktops, ruggedized notebooks, and more for healthcare, government, and other challenging sectors..... page 41

SERVICES

■ Acumen Solutions is an IT consulting firm in Vienna, Va., that provides advice and vendor-agnostic software in four solutions categories page 42

■ Many enterprises are aware of the issues behind IT asset disposition, however, they continue to place their assets in storage and/or throw hardware away with the regular trash page 43

DATA CENTER MANAGEMENT

■ A well-thought out data center operations budget is the best way to ensure good financial stewardship and cost controls page 44

■ In today's dynamic data center environments, it's more important than ever to make sure data center/IT managers are knowledgeable in technologies and their impact on the enterprise as a whole page 45

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FCC Chairman Argues Need For Better Mobile Broadband

At *The Wall Street Journal's* recent D: All Things Digital conference, Federal Communications Commission Chairman Julius Genachowski stressed the importance of upgrading mobile broadband to 4G in the near future. He suggested using the Universal Service Fund and its \$8 billion-a-year budget to pay for the broadband deployment, rather than the national telephone service it is currently used for. Genachowski cited increasing smartphone usage and competition with other countries as reasons to support an upgrade and expressed his belief that the current network could be slowing innovation.

Good News For Distribution Sales

Recent data from the GTDC (Global Technology Distribution Council) found that April IT sales through distribution in the United States have surpassed the peak levels of sales prior to the recession. April 2010 sales were 27% higher than 2009 levels. The GTDC also noted that technology growth is occurring in both the business and consumer areas. For example, the sales of both televisions and audio products through distribution were up 100% from the downturn. Video products in general were up 114%. On the business side, notebooks and mobility electronics were the strongest sellers; specifically, desktops and notebooks were up 25% and storage and networking were up 23% and 28%, respectively.



Google Faces Privacy Investigation

Canada is concerned about the possible privacy implications from Google's Street View service after Google announced that the service had accidentally collected data from unencrypted Wi-Fi networks when gathering images for city streets. The data is being used to help Google locate who's using Google's Mobile Servers when they connect over Wi-Fi, and originally, Google stated that it had only collected Wi-Fi network names and MAC addresses. The Privacy Commissioner of Canada has begun an investigation into the data that Google collected from the unsecured wireless networks, which follows similar investigations by France and Germany earlier in the month.

Suicides At Foxconn Prompt Pay Increases

Workers at Hon Hai Precision Industry, otherwise known as Foxconn, will soon be receiving hefty raises following a string of suicides at the company's Shenzhen factory. Foxconn is the world's largest electronics contract manufacturer and is a major supplier to Apple, Dell, and Sony. Due to public indignation over what has been called a "suicide cluster," base salaries for the manufacturer's employees will increase about 30%. Foxconn claims that the raises are unrelated to the suicides and instead are being instituted as a cost of living adjustment; however, it's likely that public allegations questioning the quality of the company's labor practices have played a major role.

Red Flags Rule Extended

The Federal Trade Commission released a statement announcing that it is postponing the enforcement of the Red Flags Rule through the end of 2010. The announcement says

WATCH THE STOCKS

This information provides a quick glimpse of current and historical stock prices and trends for 13 major companies in the technology market.

Company	Symbol	Year Ago	May 26 \$	June 10 \$	% change from previous issue
AMD	AMD	\$4.69	\$8.22	\$8.01	▼ 2.55%
CA Technologies	CA	\$17.84	\$19.68	\$19.68	Uchgd.
Cisco Systems	CSCO	\$20.10	\$22.89	\$22.77	▼ 0.52%
Dell	DELL	\$13.27	\$13.25	\$13.07	▼ 1.36%
Google	GOOG	\$429	\$475.47	\$487.01	▲ 2.43%
HP	HPQ	\$37.23	\$45.72	\$46.50	▲ 1.71%
IBM	IBM	\$109.40	\$123.23	\$127.68	▲ 3.61%
Intel	INTC	\$16.35	\$20.70	\$20.55	▼ 0.72%
McAfee	MFE	\$40.20	\$31.57	\$32.81	▲ 3.93%
Microsoft	MSFT	\$22.83	\$25.01	\$25	▼ 0.04%
Oracle	ORCL	\$20.94	\$21.91	\$22.20	▲ 1.32%
Red Hat Software	RHT	\$20.52	\$28.92	\$30.07	▲ 3.98%
Symantec	SYMC	\$15.88	\$14.14	\$14.43	▲ 2.05%

NOTE: This information is meant for reference only and should not be used as a basis for buy/sell decisions.

Congress is contemplating legislation that would affect the scope of the rule, which aims to strengthen anti-identity theft requirements for organizations that deal with the financial information of consumers. According to a statement from FTC Chairman Jon Leibowitz, some legislators have found—and are now trying to fix—that the current legislation could have unintended consequences. The Red Flags Rule is part of larger identity theft prevention legislation, called the Fair and Accurate Credit Transactions Act.

CSIRO Takes On Wireless Carriers

AT&T, Verizon Wireless, and T-Mobile are being accused of patent infringement for selling products that include wireless LAN capabilities. The Australian CSIRO (Commonwealth Scientific and Industrial Research Organization), which brought the suit against the American mobile service providers, owns the patent that it claims provides the foundation for all Wi-Fi standards (IEEE 802.11a/b/g/n) and has already successfully sued other large vendors, such as Microsoft and Dell. Products with Intel chips are the exception to the lawsuit because of a prior settlement between CSIRO and Intel. Verizon Wireless and T-Mobile have both released statements denying CSIRO's claims, but AT&T has yet to release a statement.

Adobe Considers More Frequent Patch Schedule

To improve security, Adobe Systems is considering patching its applications more frequently. Last year, Adobe moved to a quarterly patching schedule for its Acrobat and Reader programs, and patches for other applications are issued on an as-needed basis. The new schedule would be similar to that of Microsoft and Oracle, both of which issue monthly patches, and products such as Flash and Shockwave would be incorporated into the update cycle. Adobe announced its changes in security following an increase in hackers exploiting vulnerabilities in its products to infect and get remote control over a user's PC.

Data Center Cooling Improvements Could Save IRS Millions

According to a recent report from the Treasury Inspector General for Tax Administration, the Internal Revenue Service could save more than \$3 million over the next four years by employing better cooling techniques in two of its data centers. The IRS has 11 data centers in all, but total savings are not known because energy consumption data was not available for the other nine. The \$3 million savings figure also did not take into account the costs that would be incurred while making the necessary data center upgrades to meet better efficiency standards.

Group Sues Over H-1B Memo

IT staffing firms Broadgate, Logic Planet, and DVR Softek have joined the American Staffing Association and the TechServe Alliance in suing the USCIS (U.S. Citizenship and Immigration Services) over a recent USCIS memo. The so-called Neufeld Memo, written by USCIS Associate Director Donald Neufeld, declares that IT staffing services are no longer considered U.S. employers because of the nature of their relationship with their temporary H-1B workers. Allegedly, the USCIS has been using the memo to deny H-1B visas, and the suit asserts that the memo goes against other existing laws.

SonicWall Agrees To Acquisition

An investor group and a pension plan for Canadian teachers will become the new owners of backup and recovery vendor SonicWall, according to a statement from the company. After an estimated \$717 million in cash changes hands—representing an actual payout of \$11.50 per share—the Thoma Bravo-led group, which includes the Teachers Private Capital wing of the Ontario Teachers' Pension Plan, will acquire the company in the third or early fourth quarter this year. At the time of the announcement, said payout was substantially greater than SonicWall's market value—28% higher than its share price and 63% more than its enterprise value, according to the company.

IE, Safari, Chrome Gain In U.S.; Firefox Loses

Monthly U.S. Internet browser usage figures show a modest reversal of fortune for Microsoft's Internet Explorer, according to research firm Net Applications. Throwing last month's loss of share into relief, IE climbed 0.76% to a 63.2% segment of the domestic market in May, including an upward step of 1.34% for version 8. Mozilla's Firefox continued to slide almost imperceptibly—0.24%—to 20.38% of browsers used during the month, while Apple's iPad gave a boost to Safari's third position in the rankings (10.43%). Google's Chrome, too, continued to grow, reaching a 4.54% share, according to Net Applications.

iPhone OS Market Share Outstrips Android 3 To 1

According to the latest Nielsen ratings, the competition between Apple's iPhone and Google's Android is nowhere near neck-and-neck. Comparing each corporation's results of the 2009 fourth quarter and the 2010 first quarter, market share for the iPhone OS topped out at 28%, whereas the Android OS' market share was 9%. However, the iPhone OS remains in second place; RIM's BlackBerry platform holds a 35% market share. The Nielsen study also reveals that Android and iPhone users are faithful to their devices; 80% of iPhone users want the next iPhone upgrade, and 70% using an Android phone would buy another Android model.

China Anticipates High iPad Sales

It only took the iPad 28 days to reach high sales globally, and analysts expect iPad sales in China to exceed 7 million once it's released. According to In-Stat's 2014 forecast report, sales for the iPad in China are expected to pull in 10-fold growth over the next five years. China's iPad will utilize WDCMA via China Unicom for its 3G standard. Although plenty of counterfeit iPad devices have already been released in China, such as the iP6, Apple's iPad is slated for a full launch in August. Chinese citizens already clamoring for the iPad have resorted to buying smuggled 16GB 3G devices for as much as \$960.

PC Shipments On An Upswing

iSuppli recently revealed that worldwide PC shipments were up by 22.7% (81.5 million units) for Q1, which is a year-over-year record—Q1 2009 saw just 66.5 million units ship. iSuppli reports that the boost is largely due to solid PC sales in Asian markets coupled with Q1 2009

having been one of the weakest markets that the industry has endured to date. Currently, HP is the No. 1 PC supplier, followed by Acer; the latter company increased its market share by 2.2% compared to Q1 last year.

Report Details Social Media Risks For SMEs

In an attempt to get companies that are interested in social media to proceed with caution, ISACA (formerly the Information Systems Audit and Control Association) released a report on the risks inherent to social media. The firm found that viruses and malware were the riskiest components of experimenting with social media, followed by brand hijacking, corporate content mismanagement, failure to meet customer service expectations, and failure to adhere to record management regulations. The group found that most of the negatives of social media result from employees who fail to comprehend the consequences of their actions on the company as a whole. ISACA advises enterprises looking to take the social networking plunge to spell out explicit corporate guidelines regarding the information that can and cannot be disseminated and to take steps to limit or at least manage employees' use of social networking sites.

IE6 Increasingly Vulnerable To Attacks

A recent report from cloud security vendor Zscaler shows that more than one quarter of total Internet traffic is still navigated using Internet Explorer 6, a browser that is nearly a decade old and that lacks current security features. This figure is lower than in January 2010, when IE6 navigated 34% of all traffic; what's more, the number of enterprises upgrading to IE8 jumped to 10% in the first four months of 2010, up from 6%. According to a statement from Michael Sutton, Zscaler's vice president of security research, it's a major security issue that so many still use IE6 because attacks are growing increasingly sophisticated, automated, and difficult to eradicate.

Deloitte Sued For \$30 Million

Marin County, Calif., recently filed a lawsuit against Deloitte, a software consulting firm, claiming that Deloitte falsely represented its expertise in SAP systems and used the county as a training ground for SAP experience at the county's expense. The \$30 million suit accuses Deloitte of withholding information about its abilities, not disclosing critical issues with the SAP project, and hiding system defects before the system went live, all of which eventually resulted in a faulty SAP system. The county says that despite paying Deloitte more than \$11 million, the system continues to buckle under major issues. Deloitte, on the other hand, says that Marin County still owes it more than \$550,000 in unpaid fees and interest and says that the county did not adhere to certain terms of their agreement.

IBM To Open Research Lab In Brazil

IBM's first new research lab in a dozen years is set to open at existing IBM facilities in Sao Paulo and Rio de Janeiro in Brazil. The lab, IBM's first in South America, will eventually house more than 100 researchers. A statement from IBM cited Brazil's "abundance of natural resources and technical talent" as a prime reason for locating the lab in that country and noted that IBM scientists intend to collaborate "with universities, government organizations, and companies in Brazil and across Latin America." Brazil has been courting outside investments as part of its economic growth plans, and the move is seen internally as a boon to the government.

Microsoft Announces Windows 7 SP1 Coming In July

Microsoft announced at the Microsoft TechEd Conference earlier this

month that it will release Service Pack 1 for Windows 7 in July. The release, however, "will not contain any new features that are specific to Windows 7 itself," blogged Microsoft's Gavriella Schuster. "For Windows 7, SP1 will

simply be the combination of updates already available through Windows Update and additional hotfixes based on feedback by our customers and partners." What this means, Schuster wrote, is that "customers can feel confident about deploying Windows 7 now." Schuster added that Microsoft has sold more than 100 million Windows 7 licenses, and a recent study from Dimensional Research/KACE indicates 16% of IT professionals have Windows 7 running, while 42% plan to begin deploying the OS by 2010's end. In addition to the Windows 7 announcement, Microsoft also announced a July release of a service pack for Windows Server 2008 R2.

Social Networking Driving Mobile Phone App & Browser Usage

Results from a recent report released by ComScore concerning the fastest-growing mobile app and browser content categories show that social networking usage gained the most traction among both app and browser access. The results, which compare numbers for a three-month span ending in April 2010 vs. the same duration ending in April 2009, show usage of social networking apps grew 240% to about 14.52 million users, while usage of mobile browsers to reach social networking sites grew 90% to 29.84 million users. Other leading categories where app usage proved particularly strong include news (124%), sports information (113%), and bank accounts (113%). Similarly, other mobile browser categories showing big gains in usage include bank accounts (69%), general reference (54%), and sports information (54%). ComScore reports that total mobile application usage from last year to this year grew 28%, while total mobile browser usage grew 31%.

EHR Products Lack Standards

Despite a commitment to bringing usable electronic health record products to the market, best practices for designing, testing, and monitoring usability of EHR products are not readily available. That's among the major findings of a survey conducted by the Agency for Healthcare Research and Quality. The survey, which interviewed EHR product makers, also showed interest among manufacturers for an independent group that could work toward establishing usability standards and vendor collaboration. The report made several recommendations, including establishing formal usability testing processes and deployment standards and best practices.

Semiconductor Market Outlook Improves

Gartner says it now expects worldwide semiconductor revenue to reach \$290 billion this year, up more than 27% from last year. The research group's first-quarter forecast showed an anticipated 19.9% growth in revenue this year. Gartner says the PC and mobile phone markets are expected to make up 40% of the growth in the semiconductor market. Bryan Lewis, a Gartner research vice president, says sequential semiconductor growth has been

strong for the past five quarters. However, he says, Gartner expects the semiconductor industry will experience below-average growth in the second half of this year as it goes through a "minor correction."



Upcoming IT Events

Are you looking to learn more about data center or IT topics? Network with some of your peers? Consider joining a group of data center professionals. If you have an event you'd like listed, please send an email to feedback@processor.com.

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June 18
www.aitp-li.org

• • •
ISSA Upstate South Carolina
June 18
NuVox
301 N. Main St., Suite 5000
Greenville, S.C.
www.upstate-issa.org

• • •
AFCOM Central Ohio
June 19
Columbus, Ohio
www.afcomcentralohio.org

• • •
AITP California Southland
June 23
www.aitpcalsouthland.org

• • •
ISSA Baltimore
June 23, 4:30 p.m.
Sparta Inc.
7110 Samuel Morse Drive, Suite 200
Columbia, Md.
www.issa-balt.org

• • •
AFCOM Central Texas
June 24
Austin, Texas
www.afcom.com/afcomnew/CentralTexas.HTML

• • •
Integrate 2010: Uniting The World Of IT
June 24-25
Executive Caterers At Landerhaven
6111 Landerhaven Drive
Mayfield Heights, Ohio
cgle.itsmfusa.org/?q=content/integrate-2010

• • •
ISSA Des Moines
June 28
3920 SW Camden Circle
Ankeny, Iowa
www.issa-desmoines.org

• • •
AITP Akron
June 29
Akron, Ohio
www.akron-aitp.org

• • •
ISSA Inland Empire
June 29, 11:30 a.m.
Coco's Restaurant and Bakery
60 West Foothill Blvd.
Upland, Calif.
ie.issa.org

• • •
- JULY -
AITP Washington D.C.
July 8, 6:30 p.m.
Alfio's Restaurant
4515 Willard Ave.
Chevy Chase, Md.
aitpwashdc.ning.com

• • •
ISSA Northeast Ohio
July 8
Cuyahoga County Library-Parmal South
7335 Ridge Road
Parma, Ohio
www.neoissa.org

• • •
SQL Server Society of Las Vegas
July 8
The Learning Center of Las Vegas
777 North Rainbow
Las Vegas, Nev.
ssolv.com

• • •
AITP Garden State
July 13
Jim Johnston's Steakhouse
58 Eisenhower Parkway Mountain Plaza
Roseland, N.J.
tech.groups.yahoo.com/group/aitpgardenstatechapter

• • •
AITP Richmond
July 13
2015 Staples Mill Road
Richmond, Va.
www.aitprich.org

• • •
ISSA New England
July 13
Weymouth, Mass.
www.issa-ne.org

For more Upcoming IT Events, see page 10.

PRODUCT RELEASES

The Processor Product Releases section includes brief overviews of data center products.

All products listed have been released recently, so use this section to get up to date with what's new on the market and to find products you need.

Manufacturers:

Do you have a new product that data center/IT managers would be interested in learning about?
Send your press release or product information to press@processor.com.

CLIENTS

Cabinet NG CNG-WEB 6.2

Cabinet NG announced CNG-WEB 6.2, the latest version of CNG-WEB, a module that provides a secure Web browser interface to CNG-SAFE. The enhanced version creates workflow efficiency by allowing users to search cabinets and folders and view documents from any location without installing additional software. CNG-WEB 6.2 includes document trace and last location memory.

FrontRange Solutions GoldMine Premium Edition 9

FrontRange Solutions announced GoldMine Premium Edition 9, an upgrade to the GoldMine CRM product portfolio. The upgrade is designed to enhance customer service and business support through better client knowledge sharing. Upgraded features include customizable real-time dashboards for quicker data access and full integration with Microsoft Outlook for improved collaboration.

Kofax Transformation Modules 5.0

Kofax announced version 5.0 of its Transformation Modules, which automate paper and electronic form and document tasks such as classification, sorting, and separation. New features include enterprise-level processing capabilities and advanced data validation and recognition, all in a single platform that can help companies increase speed, accuracy, and throughput for high-volume document processing.

OKI Color & Mono LED Compact Printers

OKI announced a lineup of LED printers including the C330dn and C530dn color printers and the B411 Series and B431 Series mono printers. OKI says the C530dn can print 27 ppm color and 31 ppm mono. Each printer is compact, features an expandable paper capacity, and is specifically designed for SMEs.

SoftLayer Mobile Client

SoftLayer released Mobile Client, an application for the iPhone OS. Designed for SoftLayer customers, the application provides server and account management tools for the iPhone, iPod touch, and iPad. The Mobile Client application combines smartphone hardware and software to deliver tickets, servers, and bandwidth. The free application can be downloaded through the iTunes Store.

Tyco Electronics Elo TouchSystems Interactive Digital Signage

Tyco Electronics introduced its Elo TouchSystems Interactive Digital Signage, a touch system designed to create opportunities for digital display applications and development. The IDS combines acoustic pulse recognition touchscreen

technology with large-format LCD panels to provide the interactive enablement of large-scale digital displays in high-traffic environments.

MESSAGING & TELEPHONY

Alcatel-Lucent, HP UC&C Solutions

Alcatel-Lucent and HP are partnering to provide new communication products that let clients adopt and use UC&C (Unified Communications and Collaboration), which are HP's consulting services available for implementation on-premises or



through an outsourced operating model. Various offerings through the alliance include migrating from multivendor and legacy PBX to an IP voice integration layer that's based on Alcatel-Lucent's open IP Telephony architecture via such products as the Genesys Customer Interaction management platform; creating automated workflow and workloads in businesses to reduce operational costs; and applications that streamline the ability to reduce costs and improve efficiency.

Ensim Unify Service Manager For Microsoft Exchange 2010

Ensim introduced Ensim Unify Service Manager for Microsoft Exchange 2010, which can be used with both HMC (Microsoft Hosted Messaging and Collaboration) and non-HMC environments. The product lets customers deploy its services and Exchange 2010 onto their current infrastructures without disruption.

HP Collaboration & Consolidation Solutions

HP has released numerous communications, collaboration, and networking tools; storage products; and online services for SMEs that the company says will let SMEs streamline communications and operations while putting in place more efficient avenues to market for expanding business. Communication and collabora-



tion products include an HP and Microsoft Unified Communication & Collaboration product that combines servers, storage, networking, and software aimed at streamlining operations across messaging, video,

and voice applications. An HP Converged Infrastructure solution, meanwhile, gives SMEs a means to create technology environments conducive to speeding up innovation by converging servers, storage, networking, and management.

Siemens Enterprise Communications OpenScape Office MX

Siemens Enterprise Communications announced OpenScape Office MX, an all-in-one UC solution designed for SMEs. Features include voice, UC, and critical data network capabilities in a single application; a simple software upgrade from HiPath OpenOffice ME; and intuitive access to advanced UC features.

NETWORKING & VPN

3PAR Red Hat Enterprise Virtualization For Servers

3PAR announced support for Red Hat Enterprise Virtualization for Servers, a server virtualization solution that includes a kernel-based virtual machine hypervisor and server management tools. 3PAR InServ Storage Server customers can now use the Red Hat hypervisor to build and deploy virtualization environments.

Apposite Technologies Netropy N60, N80 & 10G Network Emulation Appliances

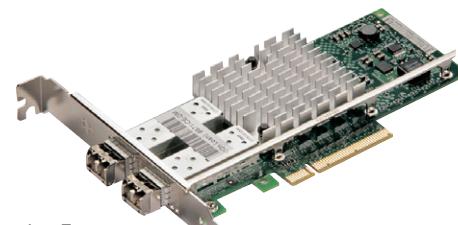
Apposite Technologies has three new network emulation appliances starting at \$8,000: the Netropy N60 (1Gbps Emulation Engine), N80 (four 1Gbps Emulation Engines), and 10G (two 10Gbps and one 1Gbps Emulation



Engines). Each emulation engine can simulate the bandwidth, latency, loss, and other network conditions for up to 15 separate WAN links, letting IT admins benchmark, troubleshoot, and optimize the performance of enterprise applications. Beyond simulating multisite networks, the appliances can be used to benchmark different products, run multiple concurrent tests, isolate and test individual applications, and emulate advanced network conditions.

Atto Technology FastFrame NS11 & NS12

Atto released its FastFrame family of 10Gbps Ethernet adapters based on Intel's 82599 controller. The NS11 and NS12 support unified SAN and LAN connections as well as CPU load balancing,



iSCSI remote booting, and data center bridging. The 1-port NS11 and the 2-port NS12 both use an x8 PCI-E 2.0 connection to the host. Atto intends the adapters for medical imaging, video rendering, clustered computing, and other demanding applications. Atto

says the NS11 and NS12 can balance network loads, reduce latency, and eliminate redundant network infrastructure components. Converged adapters including Fibre Channel connectivity will be released later this year, the company says.

Bandspeed AirMaestro RF Monitoring Service & RF Monitoring Console Software

Bandspeed announced its AirMaestro RF Monitoring Service and RF Monitoring Console software. Both applications run on a server or appliance and manage the communication of multiple remote systems containing AirMaestro RF Signal Analyzers. Bandspeed says the software provides RF spectrum analysis and interference management that can be integrated into WLAN management solutions.

Dell KACE K1000 Management Appliance

Dell KACE introduced its Dell KACE K1000 Management Appliance, designed to meet the systems management needs of midsized enterprises. The K1000 Management Appliance features predefined reports, Enhanced Smart Label technology, and service desk functionality consistent with IT Infrastructure Library best practices.

Fluke Networks Switch Port Monitor

Fluke Networks announced the Switch Port Monitor, a tool designed to provide visibility into network switches to help solve common LAN problems. The free, downloadable, Windows-based tool features monitoring via SNMP (Simple Network Management Protocol); detailed port information such as interface name, speed, and status; and ease of access.

Force10 Networks S60 ToR Gigabit Ethernet Switch

Force10 Networks announced the S60 ToR (top-of-rack) Gigabit Ethernet switch, an extension of the company's line of S-Series access switches. The S60 is designed for dynamic virtualized data



center environments and lowering operational costs at the rack edge. Features include ultra-deep buffering, "bare metal" auto-configuration, low power consumption, and nonblocking line-rate switching. The S60 was created to help alleviate the problem of unpredictable I/O traffic caused by the increase in virtualized, multicore servers running on-demand applications.

GFI Software EventsManager 2010

GFI Software announced its EventsManager 2010 solution, which helps administrators collect and manage daily system events. EventsManager offers real-time monitoring of network events logs and analyzes and reports event data. Features include the ability to archive all events into files parallel with events processing, an intuitive dashboard that shows important network events in real time, username detection for network activity events, performance optimizations due to efficient CPU and memory utilization, improved usability, and new reports. EventsManager 2010 supports event log

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PRODUCT RELEASES

types such as W3C, Windows events, Syslog, and SNMP traps generated by routers, firewalls, and sensors.

■ GFI Software GFI LANguard

GFI Software announced the latest version of its GFI LANguard utility software that helps network administrators manage software and security patches for non-Microsoft software products. The software allows administrators to detect and correct network vulnerabilities with minimal administrative effort. GFI LANguard carries out more than 15,000 vulnerability assessments per scan, which can include any virtual environment. The latest release features the ability to detect and deploy missing patches on a variety of software products, including Adobe Flash, Acrobat, and Shockwave; it also detects vulnerabilities in other products, such as Firefox, Thunderbird, and Java Runtime, among others.

■ Hemoco Software Lansweeper 4.0

Hemoco Software released version 4.0 of its Lansweeper software, an agent-free utility that lets admins perform a complete hardware, software, and network inventory on Windows-based networks. With Lansweeper, IT admins can view all details of hardware and software on their company's clients and IP-enabled devices and also manage the company's assets via a Web-based interface that includes the



ability to customize reports, actions, and scripts. More than 200 reports are built in, as is Active Directory integration. Version 4.0 adds device scanning; Windows eventlog error scanning with email alerts; hardware and software change detection; and product key scanning support for Microsoft, Adobe, and plain-text keys.

■ Infoblox IPAM For Virtualization

Infoblox released the Infoblox IPAM for Virtualization, an IP address management solution designed for virtual machines. The solution allows you to find relationships between virtual endpoints and physical networks to help identify networking issues. It also lets virtualization teams manage their own IP space without affecting other teams.

■ Infoblox OS1 Orchestration Server

Infoblox released the Infoblox OS1 Orchestration Server, which automatically collects, correlates, and distributes data between IP systems in real time. Its foundation is based on the IF-MAP (Interface to Metadata Access Points) standard from the Trusted Computer Group, which makes automating systems, processes, and programs easier and eliminates the need for custom integration using SNMP, syslog, proprietary APIs, or custom scripts. With the IF-MAP technology, the Infoblox OS1 Orchestration Server can gather both standardized and user-defined data. Additionally, IF-MAP clients can

publish metadata to the MAP server, search for data, and receive automatic updates for data of interest.

■ National Instruments NI WLAN Measurement Suite 2.0

National Instruments released the NI WLAN Measurement Suite 2.0, a multi-protocol wireless testing suite that comes with support for 802.11n Wi-Fi MIMO signal generation and analysis. Accurate and fast, according to National Instruments, NI WLAN Measurement Suite 2.0 also supports GPS, GSM/EDGE, WiMAX, Bluetooth, and other wireless standards.

■ Oracle Sun Ray 3 Plus Client

Oracle released its Sun Ray 3 Plus Client, the latest addition to its Oracle Virtual Desktop Infrastructure suite. The company's Sun Ray Client family consists of low-cost devices for displaying server-hosted desktops for Windows, Linux, and Solaris. Used as a tool to support desktop virtualization, the Sun Ray 3 Plus Client features an ENERGY STAR 5.0 rating, support for up to two 30-inch displays, faster throughput via Gigabit Ethernet and USB 2.0, and improved security. Oracle Virtual Desktop Infrastructure 3.1.1 supports Windows 7 and offers improved performance and flexibility, including VLAN support for Microsoft Hyper-V.

■ RAD Data Communications ETX-1002

RAD Data Communications announced its ETX-1002, a 10 Gigabit Carrier Ethernet aggregation switch. RAD says it provides a central aggregation solution for RAD's ETX Carrier Ethernet demarcation devices. The ETX-1002 is designed for deployment in 1 Gigabit and 10 Gigabit Ethernet access rings and is equipped with multipriority traffic management capabilities and Ethernet OAM diagnostics.

■ SGI Management Center & ProPack 7

SGI launched the SGI Management Center, which is a comprehensive control center and central interface for system management of SGI platforms. The firm also released the SGI ProPack 7, which is SGI's latest suite of application performance tools and libraries for Linux distributions. SGI Management Center and SGI ProPack 7 are available with select SGI systems.

■ SIE Computing Enhanced System Maintenance Services

SIE Computing announced an enhanced set of system maintenance services for integrated systems that feature an SIE chassis or backplane. The full offering includes performance troubleshooting, diagnostics, replacement, maintenance upgrades, redesign, and repair for SIE and third-party components, including sub-assemblies, enclosures, integrated systems, and boards. SIE says the system gives customers a single point of contact for service on systems made of components from different vendors. By eliminating the need to work with multiple vendors and components, the system will reduce overall downtime and system costs, SIE says.

■ Simena Packet Flow Switch PFS1524

Simena's Packet Flow Switch PFS1524 is an ultra-low-latency monitoring switch ideally suited to the demands of tool aggregation and traffic consolidating and dividing. The high-density switch features 24 ports that support up to 10 Gigabit Ethernet connections. The PFS1524

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supports all types of SFP+ and SFP modules, which lets users collect packets from a variety of sources at any speed and forward them to other devices. The device



lets users configure, create clusters, and manage multiple units using a central Web-based interface. Other standout features include Simena's low-latency packet forwarding, wire-speed packet filtering, packet slicing, and port tagging.

PHYSICAL INFRASTRUCTURE

■ Chatsworth Products N-Series TeraFrame Network Cabinet For Cisco Nexus 7018 Switch

Chatsworth released an N-Series TeraFrame Network Cabinet engineered specifically for the Cisco Nexus 7018 Switch. The cabinet is tested for use with Cisco Nexus 7000 18-slot switches in hot aisle/cold aisle layouts and supports a mix of patch panels and fiber enclosures. A network switch exhaust duct guides hot air from a switch's side to the cabinet's rear.

■ Chatsworth Products Velocity Cable Management

Chatsworth Products introduced Velocity Cable Management, a cable management tool designed for open two- and four-post rack systems. The Velocity cable managers are available in 6-, 7-, and



8-foot models, with either a single- or double-sided vertical configuration. Single-sided horizontal models are also available. Chatsworth Products designed the Velocity Cable Management products to be easy to assemble and install, while also cutting package sizes in order to reduce shipping costs and storage space. T-shaped cable guides with rounded edges help to arrange cables. Openings on the sides of the managers align with each rackmount unit to help with cable management, as well.

■ Coolcentric LiquiCool RDHx

Coolcentric has added two models to its LiquiCool RDHx (rear-door heat exchanger) line with the 47U tall RDHx and wide versions of the 42U and 47U RDHx. Coolcentric says the models let users deploy passive, liquid-cooling RDHx products on a broader range of enclosures used in data centers. The models will be deployed on most leading IT enclosure brands.

■ CRU-DataPort DataPAK 1U Rackmount Enclosures

CRU-DataPort announced the debut of its DataPAK 1U Rackmount enclosures, which feature DualPAK removable drive carriers capable of housing two 3.5-inch hard drives. The DataPAK 1U is an ideal solution for disk-to-disk backup users who need offsite storage while running RAID applications. IT staff can take a backup offline simply by pulling one carrier, while backups continue on the remaining carrier.

■ Emerson Network Power Liebert MB

Emerson Network Power introduced the Liebert MB modular busway, a distribution system that allows flexible power delivery options. Directed toward data center managers, the Liebert MB comprises three main components including a tap box for input connection, a busway that extends three-phase power distribution over or under rows of racks, and bus plugs for distribution.

■ Leviton Secure Keyed LC Fiber System

Leviton released Secure Keyed LC Fiber System, a security system that

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PRODUCT RELEASES

Continued from Page 5

prevents unauthorized and inadvertent changes in government applications such as data centers. The system creates a lock-in solution, and once connected to a port, the built-in locking design prevents removal by hand. The system also contains lock-out capabilities to protect unused LC ports.

■ Pelican-Hardigg Advanced Case Solutions

California-based case maker Pelican Products has partnered with Hardigg Industries to launch Pelican-Hardigg Advanced Case Solutions, high-level case customization solutions dedicated to creating custom protection systems for sensitive, mission-critical equipment. The new Pelican-Hardigg Advanced Case Centers will be located in California, Texas, Virginia, Georgia, Canada, France, and the UK.

■ Server Technology Sentry Power Manager 4.2

Server Technology introduced version 4.2 of its SPM (Sentry Power Manager) software, which offers a more streamlined operating system for faster operation and more accurate data logging. New security options include login lockouts for security, blocked creation of certain user names, SSH support over Telnet support, SSL support, and per-user lockouts for invalid password attempts.

■ Siemon DIN Rail Mounted Patch Panels

Siemon introduced its DIN Rail Mounted Patch Panels, which are four-port panels that fit any standard 35mm DIN rail. They work as a flexible patching solution for RJ-45-based copper and optical fiber Industrial Ethernet connections. This provides an Ethernet connection wherever DIN rail is available.

SECURITY

■ Astaro RED

Astaro announced Astaro RED (Remote Ethernet Device), which is designed to offer security to remote offices. The devices, which are managed through the central office using Astaro Security Gateway, feature VPN functionality and require no training, licensing, or technical



expertise on the user end. Any changes to security policies originate from the central office and automatically update the remote device. Setup takes just minutes, and the device automatically registers itself with the central Astaro office once connected and configured.

■ nCircle Certified PCI Scan Service

nCircle released the latest version of nCircle Certified PCI Scan Service for scanning Internet-facing payment networks for PCI compliance. Updated features include automated asset discovery, annual subscription pricing, exception management, and a simplified user interface. The PCI Scan Service uses a three-step compliance process involving the initial scan, result review, and submission.

■ NitroSecurity NitroView CIP

NitroSecurity released NitroView CIP (Critical Infrastructure Protection).

NitroView CIP provides security and compliance thanks to its direct monitoring and assessment of cyber assets. Through a partnership with Encari, NitroSecurity designed the product to deliver real-time critical infrastructure security monitoring with NERC (North American Electric Reliability Corporation) compliance.

■ Radware APSolute Attack Prevention

Radware announced APSolute Attack Prevention, an all-inclusive security appliance to protect data centers and networks from hybrid attacks. It connects several defenses together and lets them work synchronously to deliver more comprehensive protection against application vulnerability, information theft, authentication defeat, malware spread, and other downtime issues. APSolute Attack Prevention integrates different tools/modules, plus management and reporting that work together to best detect and prevent hybrid threats. The key elements are DefensePro and APSolute Vision. DefensePro integrates IPS, NBA, and DoS protection, while APSolute Vision offers a unified management system for monitoring, forensics, and reporting. An Emergency Response Team service delivers immediate hands-on assistance.

■ Radware DefensePro

Two acceleration units help provide three types of security for your enterprise in newly enhanced appliances from Radware. DefensePro, a scalable system based on the company's OnDemand Switches, can thwart even massive DDoS attacks while maintaining high throughput and network access for your employees.



Its hardware acceleration modules, which take the load off of its CPUs, include a DoS Mitigation Engine and a String-Match Engine for signature detection. Available in eight variations with different mixtures of throughput and features, the malware-blocking DefensePro line supports up to 12Gbps of network traffic to keep your operations running safely and smoothly.

■ Red Earth Software Policy Patrol 7

Red Earth Software released version 7 of its Policy Patrol application. Policy Patrol 7 adds support for Microsoft Exchange Server 2010, and it offers enhanced HTML stationery to let companies format and brand their entire email message. Version 7 provides BitDefender Anti-Virus engine as an optional add-on to allow companies to install multiple antivirus scanners to ensure that no virus enters or leaves the organization via email. Policy Patrol can be used to add email banners, headers, and promotional messages. It also includes several HTML templates that companies can use to brand their email messages.

■ Symantec Protection Suite Advanced Business Edition

Symantec announced Symantec Protection Suite Advanced Business Edition, an enhancement to the Small and Midsized Business Protection Portfolio. Upgraded features include messaging security and protection for endpoints. The Suite also provides laptop, desktop, and server backup and recovery; advanced content

filtering at the mail gateway; and easy management for IT administration.

SERVERS

■ SGI Hybrid Computing Platform

SGI announced its latest hybrid computing server technology that is capable of delivering a petaflop of performance in a single cabinet for a variety of HPC applications. SGI's platform is built upon open software architecture and designed to be highly scalable and useful in the science and engineering technical markets. Products based on the platform will arrive by the end of 2010.

STORAGE

■ Iomega eGo

Iomega revamped its eGo line of portable hard drives. The line includes a 500GB SuperSpeed USB 3.0 portable model (\$129.99), a USB 2.0 Compact Edition ranging from 320GB to 1TB (\$94.99 to \$199.99), a 1 to 2TB USB 3.0 Desktop drive (\$149.99 to \$229.99), USB 3.0 adapters (\$39.99), and a 1TB Mac edition for \$229.99.

■ Iron Mountain LiveVault 7.0

Iron Mountain announced the latest version of LiveVault, the company's application and server backup solution designed for midsized enterprises. LiveVault 7.0 is a fully managed cloud-based data protection platform that natively supports data deduplication and proactive administration and monitoring. Updated features include protection



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support for up to 7TB of data per server and quick data restoration via Iron Mountain's TurboRestore onsite appliance. Other features include enhanced vulnerability management and threat detection programs. The LiveVault data shuttle service is also available for customers making their initial migration.

■ Hitachi Maxell DAT 320

Hitachi Maxell released its DAT 320 data cartridge, which can store 160GB natively or up to 320GB of compressed data. The seventh-generation DDS tape format supports transfer speeds of up to 24MBps with compressed data, the company says. It's also backward-compatible with DAT 160.

■ Nasuni Filer

Nasuni released Nasuni Filer, a cloud-based storage-as-a-service technology. The customer dashboard manages and monitors billing for several cloud providers. The dashboard also gives customers reports that help them understand, control, and track their storage use and the costs of storing different file types with various providers.

■ NetApp StorageGRID

NetApp released the NetApp StorageGRID, which is designed to manage distributed repositories of images, videos, and enterprise records. The solution is scalable, so customers can move beyond traditional storage options to global data storage, NetApp says. StorageGRID also features intelligent data management and retention and always-on data availability.

■ SanDisk SSD P4 & SSD G4

SanDisk introduced its latest solid-state drives, the SSD P4 and SSD G4,

which come in 128GB and 256GB capacities, respectively. The SanDisk SSD G4 comes in a slim form factor that enables customers to use it to replace mechanical drives in notebooks and netbooks. This drive offers sequential read/write speeds of up to 220 and 160MBps. The SanDisk SSD P4, on the other hand, is available in even smaller form factors for handheld, tablet, and other small electronics applications. The SanDisk SSD P4 supports burst random 4KB performance of up to 600 I/Ops. Both of the SSDs feature SanDisk's Adaptive Flash Management technology, which delivers a perfect balance between performance, reliability, and price. SanDisk will offer the drives starting in Q3 2010, with pricing dependent on quantity ordered.

■ Seagate Technology Momentus XT Drive

Seagate Technology announced their Momentus XT solid-state hybrid drive for laptops. The drive spins at 7,200rpm and has 4GB of solid-state memory. The drive will be featured in the Asus ROG G73JH notebook and uses Seagate's Adaptive Memory technology, which optimizes the drive's performance by moving frequently used information into the flash memory.

■ Tandberg Data LTO-5 StorageLoader, StorageLibrary T24, T40+

Tandberg announced an autoloading storage unit and two libraries based on LTO-5 tape technology. Tandberg says the products will let customers shorten their backup windows and simplify storage management. The company's just-released StorageLoader, with a starting price of \$5,200, is an entry-level autoloader with eight tape



slots and a maximum compressed data capacity of 24TB. The StorageLibrary T24 can store up to 72TB (compressed) in a 1U, 24-slot library. Its sibling, the StorageLibrary T40+, comes with either 24 or 40 slots for a maximum compressed capacity of 120TB. The T40+ is also scalable to 453TB, according to Tandberg.

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Storage Savings

Continued from Page 1

"The Economics of Storage" brief that total cost of acquisition is only 20% of total cost of ownership. This equation works both ways, however; there can be more subtle additional costs tied to some cloud operations.

"While cloud storage is very popular today, the problem comes in when you need to recover that data," says CMS' Streuter. "While fine for a few files, most services will not allow you to bring back gigabytes of data stored in the cloud, and if they did, the time would be prohibitive. Rather, they will charge to copy that data to optical media and then return it to you—a process that takes days, not the minutes many businesses require."

This begs an obvious question: How can a company do a more efficient job of handling storage? After all, increasing efficiency should lower costs over the long term.

Utilize A Virtual Infrastructure

One of the most popular answers is virtualization of storage servers. If 10 older storage systems can be consolidated into two or three, the costs of the update will eventually be paid back (and more) in saved energy and lower maintenance costs; however, those virtual servers will be sharing consolidated storage. That storage must be able to guarantee a certain level of availability so that the servers can in turn guarantee their own availability. So follows the need to invest in redundancy,

snapshotting, replication, and other things that add to the total cost of the storage. Efficiency is always necessary and usually cost-beneficial, but it doesn't come cheap.

"IT continues to pull the magic trick of doing more with less each year for two reasons," says David Hill, principal at the Mesabi Group. "One is that the price/performance of IT technology continues to improve each year courtesy of Moore's Law and equivalents. The second is that for business and technical reasons, IT shops have underutilized their resources, and so virtualization to achieve consolidation can defer having to spend money."

Deduplicate & Organize Your Data

Another major target is deduplication, the process of replacing redundant copies of files or data on a network with shortcut pointers back to one "master" instance of that data. Although deduplication entails additional software and/or appliance costs, the return comes with, as EMC puts it, "up

to 98% reductions in cumulative back end storage and up to 90% faster backups or restores." But there are caveats.

"People get excited about things like data deduplication because they think they can store 20TB or 30TB of data on a 1TB drive," says John Sloan, lead research analyst with Info-Tech Research Group. "Well, that's great, but if you're not addressing the data management side, you're still not solving the problem. You're just going to keep throwing more and more data at your backups."

Efficient management often centers on hierarchical, or tiered, storage, which segregates data into immediate "online" availability, secondary "nearline" storage (accessible within a few seconds), and archival "offline" repositories. This is the long-touted premise of tiered storage, but according to Sloan, many companies don't ever move from theory to practice. They simply leave all of their storage in one tier. This inevitably leads to a "break," wherein

either the company runs out of storage capacity or recovery objectives can no longer be met. Both problems can be cured with a smart tiered approach; plus, both nearline and offline tiers cost considerably less than online storage.

Consider Risks & Ongoing Expenses

For those that do practice tiered segregation—as well as those that take an enthusiastic approach to uptime—the tendency to over-protect against component failure, particularly in online storage, is very common.

"One of the biggest cost drivers of storage is risk mitigation," says CMS' Streuter. "So if you have data that's stored somewhere with triple redundancy and can be restored in seconds through multiple layers of architecture, that's great, so long as being stored that way is worth it. Is what's being stored worth what you're spending to protect it? If not, scale back your redundancy and lower your drive counts."

Not least of all, storage drives themselves can account for significant costs, not just up front but in ongoing expenses. Disk manufacturers now market low-power hard drives to enterprises that are high on capacity for nearline applications but lower on power consumption to help save energy.

The theme that emerges repeatedly from industry experts is that truly effective storage cost savings must be envisioned and implemented holistically, from individual drives through the SAN and on into data management. Addressing only one piece will not deliver sustainable improvement over the long haul. □

Top Cost-Cutting Tip: Look At The Big Picture

When you're feeling pressured to cut costs, sometimes it's easy to look only at dollar signs and miss the effects your changes have on storage as a whole.

To illustrate, David Hill, principal at the Mesabi Group, tells the story of a farmer who used a horse to pull a cart of his farm produce to the market each day. "The farmer bragged to a friend that he was saving money [by] feeding his horse less and less each day," Hill explains. "Then one day, the friend noticed that the farmer was pulling the cart himself. When he asked the farmer why, the farmer replied that the horse had died on him."

The moral of the story? "Don't miss the big picture," Hill says. "Cost cutting has its limitations. Yes, continue to cost cut, but IT has to continue to provide more and more value to the business."

Pumping Up The Heat

Continued from Page 1

(the new higher ASHRAE standard) at the cool air inlet of a device will provide sufficient cooling so that the device does not overheat. Chan elaborates, "Some data center managers have pushed the ambient temperature even higher than 80 F with no adverse affects. Operating IT equipment at temperatures lower than 80 F does not prolong its life, nor make it less likely to create errors. In fact, some server vendors' warranties state that even 95 F is fine."

Chan says a potential risk from raising the temperature is that there is less "headroom" to react if a cooling unit fails and temperatures start to rise. He adds, "This is why Raritan recommends following ASHRAE guidelines to place a temperature sensor near the bottom, in the middle, and at the top of IT equipment racks on the cool air inlet side. Critical and noncritical thresholds can be set for the sensors so that alerts are delivered when there are changes in the ambient temperature."

Potential Risks

Dave Ruede, vice president of marketing at Temperature@lert (www.temperat urealert.com), says the principal risk of operating at higher temperatures is reduced equipment reliability. On the other hand, he says some manufacturers have tested their systems to determine performance over a range of temperatures and have found reliability to be sufficient. Ruede notes, "While such testing, even long-term testing, provides the needed data, data center conditions can never be completely duplicated; therefore, field performance may vary from tested results."

Ruede continues, "For example, air distribution (while balanced as much as possible) is inherently nonuniform; therefore, cooling is nonuniform. Warmer areas may put some equipment at risk, and operating

higher temperatures means some equipment may be operating above recommended ranges." Ruede says ASHRAE's guidance will need to be carefully weighed against data center operating strategies.

Don Beaty, president of DLB Associates (www.dlbassociates.com) and first chair of ASHRAE TC 9.9, says risks will vary on a case-by-case basis and will require full engineering research for each case to fully understand them. In Beaty's opinion, there is no risk of equipment failure if you are operating within ASHRAE's recommended guidelines. He explains, "These are statements of reliability. Extensive testing with IT manufacturers was conducted and is still conducted on new equipment to verify reliability within these boundaries."

Beaty says rather than designing to avoid any excursions outside the recommended regions, which could add cost and complexity and reduce energy efficiency, it is tolerable to operate in the allowable region for short to moderate time periods. He notes, "The ranges represent the conditions at the inlet of the equipment. Simply supplying air within these limits does not guarantee it will reach the equipment within the limits."

Humidity & Overheating

Humidity is primarily a threat on the high and low ends of the spectrum, according to AVTECH's Sigourney. He explains, "Extremes in low humidity can cause static electricity, which can short out power devices and cause havoc with signals carried across wires that interrupt communications or corrupt data. In a high-humidity environment, condensation that develops can short out equipment, cause corrosion, and lead to people getting electrical shocks." He says managers must always be aware that machines don't

speak out when problems develop. "If conditions change, managers need to be aware so that adjustments can be made."

Although humidity was a big issue in the past, it has recently become less of a concern, says Raritan's Chan. He says ASHRAE recently relaxed its guidelines for recommended and allowable humidity. "Ideally," Chan comments, "the RH (relative humidity) should be in the range of 40 to 60%, although ASHRAE's allowable range is 20 to 80% RH. The objective is to keep humidity high enough to avoid static electricity problems and low enough to avoid electrical problems caused by excessive moisture." Humidity in the data center should be monitored, says Chan, but it does not change as rapidly as temperature, nor is it as location dependent. Raritan recommends placing one humidity sensor at each IT rack to monitor humidity.

Rising Costs

So does raising the temperature increase costs in other areas? Not according to Ruede. He says environmental monitoring equipment has been incorporated into modern data centers for the past several years, so the cost of monitoring equipment has already been factored into the design. He comments, "Concerns will appear at existing data centers where monitoring may not exist, and in particular in smaller installations such as small to midsized company server rooms. These customers have been the traditional market for cost-effective, easy-to-install, and reliable devices that let IT professionals know when their AC is not operating and the server room is overheating."

Ruede says installing simple, easy-to-deploy temperature alerting systems is the most cost-effective way to ensure that data and hardware are safe from heat-related problems.

Chan says raising the temperature can add incremental upfront costs with the purchase of environmental monitoring

equipment. However, in Raritan's view, environmental monitoring equipment ought to be part of any data center. "Over time," Chan concludes, "the savings will outweigh the initial investment. Plus, without a monitoring system, it becomes very difficult to drive efficiencies while minimizing risks." □

ASHRAE Snapshot

Don Beaty, first chair of ASHRAE TC 9.9, says ASHRAE has made the following major adjustments:

Dry bulb lower limit. There is no concern from an IT standpoint in lowering the operating condition from 68 degrees Fahrenheit to 64.4 F. The goal was to extend the control range of economized systems by not requiring a mixing of hot return air to maintain the previous limit.

Dry bulb upper limit. The justification for increasing the dry bulb limit (to 80.6 F) was to increase hours of economizer use per year.

Moisture lower limit. Lowering the moisture limit allows for a greater number of hours per year where humidification is not required. The risks of electrostatic discharge are impacted by absolute humidity (dew point temperature) and not relative humidity. Having a limit of relative humidity greatly complicates control and operation of the cooling systems and could require added humidification with a cost of increased energy.

Moisture upper limit. Based on extensive reliability testing of PCB (printed circuit board) laminate materials, it has been shown that CAF (conductive anodic filament) growth is strongly related to relative humidity. It was found that extended periods above 60% can result in failures.

Curtail Communications Costs

Cutting Back On Communications Spending Doesn't Mean Sacrificing Quality Or Features

by Christian Perry

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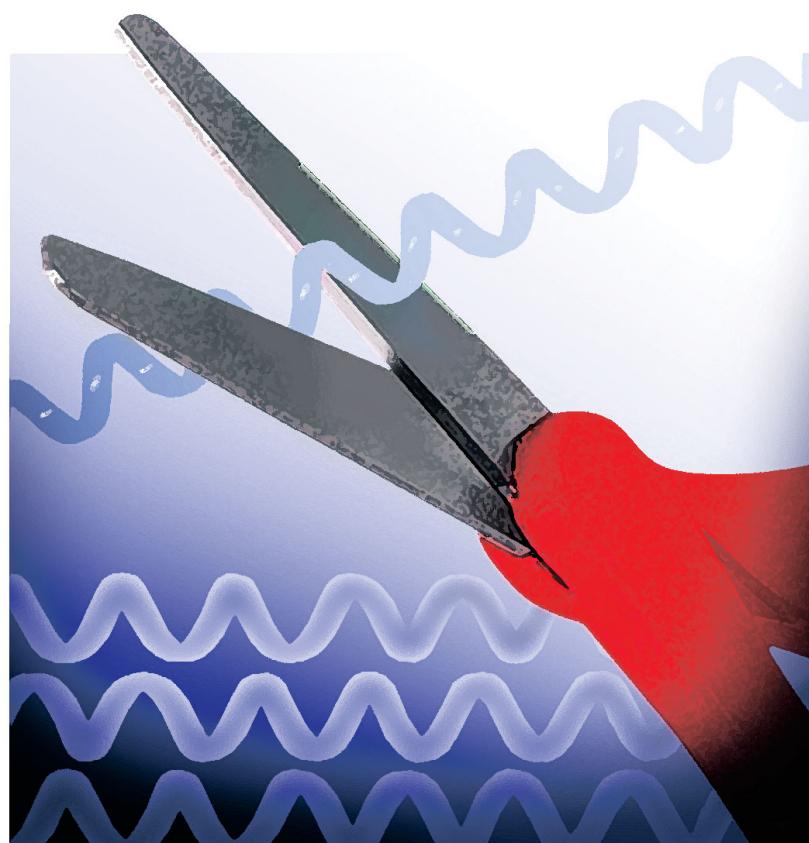
ENTERPRISES AND OTHER ORGANIZATIONS are rarely successful if their communications infrastructures aren't effective and efficient. Still, it's easy to overcompensate when building your infrastructure, in turn leading to budgetary excess that compromises the overall value of systems designed to help your employees communicate with customers, partners, and each other. Here's a look at several methods for trimming the fat from communications budgets that won't end up leaving your employees stranded on quiet islands.

Save Through SaaS

In the past several years, SaaS (software as a service) has grown into a highly valuable resource for data centers looking to offload certain tasks. Yuval Brisker, CEO of TOA Technologies (www.toatech.com), says that SaaS can also prove useful for saving on costs when it's used as part of a communications infrastructure.

"Because these systems can scale with a company and have quick implementations, they can provide ROI much sooner," Brisker says. "They also make it easier for IT departments, since system support is included in the monthly fees. And, in my experience, being able to use a Web-based system for communicating

business. Jay Botelho, director of product management at WildPackets (www.wildpackets.com), notes that the IP network is the backbone of the typical enterprise, and as such, it's usually well-designed, well-monitored, and well-maintained.



"It's all about leveraging an existing corporate asset—the IP network—as the best opportunity for cutting costs without degrading services or reducing already razor-thin headcount," Botelho says. "And with the current wave of corporate upgrades to 10GbE and 40 and even 100GbE on the horizon, the IP network is

says that smaller staffs can maintain the underlying infrastructure without relying on proprietary infrastructure elements that require additional resources and specialized skills for configuration, management, and maintenance.

IP-based technologies such as VoIP can help cut significant costs from a communications budget (in some cases as much as 50%, according to recent studies), but the actual savings can vary between users, Botelho says. This variance depends on several factors, including the starting point of a user's communications technology, the readiness of its existing IP network to handle the increased traffic, and the scope of the transition to IP-based communications technology.

Manage Airtime

Peter Felgentreff, president and CEO of NCP Engineering (www.ncp-e.com), says data centers should ensure that budget-managing policies are in place for remote VPN users, as this will allow IT managers to monitor the costs of all available VPN connec-

tion types. When such policies are in place, employees exceeding the limits designated by the IT department will receive a warning, and the secure network connection will be terminated.

Setting limits on wireless/roaming airtime usage can depend on the remote user's job or the budget, though Felgentreff says

- ### Key Points
- SaaS-based communication systems can not only remove a substantial workload from an IT staff, but they can also ramp up an organization's ability to communicate remotely and in real time.
 - Most organizations already have a well-managed IP network in place, but not all data centers are taking advantage of the cost-cutting communication measures these networks can enable.
 - Rebuilding businesses that were forced to chop away at their communications infrastructure during the recession can take advantage of hosted services that won't require many up-front costs.

limiting airtime usage makes business sense—if it does, the next step is to determine budget limitations and functionality (such as software to seamlessly manage wireless roaming budgets).

Consider Hosted Services

Targeting communications as a source of budget trimming is a delicate procedure because the risk of damaging crucial lines of communication is always lurking when components are cut from the mix. Charles Studt, vice president of product management at Intelepeer (www.intelepeer.com), says that during the recession, most businesses have cut nearly everything they could to improve their bottom line. But as they begin to recover, they have options for rebuilding that not only focus on quality, but also on that ever-so-important bottom line.

One example is hosted services, such as voice peering and SIP trunking, which can help minimize risk while eliminating most up-front costs. Studt explains that by shifting voice communications to hosted services, organizations can reduce long-distance voice costs by about 50% over traditional PSTN connections. Despite those significant savings, organizations won't need to worry about a sacrifice in quality as long as they seek business-class service levels that are backed by service-level agreements. Studt says that there are free voice peering services, but these consumer-grade services don't necessarily have the call quality and reliability of paid services. □

"It's all about leveraging an existing corporate asset—the IP network—as the best opportunity for cutting costs without degrading services or reducing already razor-thin headcount."

- WildPackets' Jay Botelho

is more effective and efficient [than non-Web-based systems]."

How much can SaaS-based communications save? Brisker points to the example of Arhaus, a high-end furniture company that implemented a SaaS system for communicating with its delivery drivers in the field. Through the use of Web-enabled devices, the company was able to save \$100,000 annually from paper reduction alone, and it discovered further savings and efficiency by communicating in real time. Brisker estimates that SaaS-based communication could save companies as much as \$10,000 annually per worker.

Take Advantage Of IP

More than ever, the modern data center is an integral part of the average communications architecture strategy, thanks primarily to the rise of IP-based communications. Yet plenty of opportunities for using the IP network to cut communications costs remain untapped in many organizations, despite IP's ability to flex and grow along with a

surely capable of handling whatever we throw at it."

Doing more with less has become a way of life for data centers in today's economy, and integrating that strategy with communications can be eased through the use of the IP network. In fact, Botelho

that a combination of both factors should play into the set limit. In some cases, the use of extensive roaming might be the only choice in certain situations, and even that could vary greatly across departments and individual users. The main question for organizations, Felgentreff says, is whether

Top Cost-Cutting Tip: Roll With The Technology Tide

The ability to effectively convey information both within and outside an organization is a fundamental business goal, but now that information comes in so many forms, it can be tough to harness that information in a way that doesn't waste resources. For example, many organizations respond individually and directly to customers, partners, and employees rather than using modern social communication

technologies to enable self-service of information, says Rob Howard, CTO and founder of Telligent (www.telligent.com).

"Everyone that an organization touches is becoming a knowledge worker, seeking and using information to make decisions, whether those decisions are for product purchases or about how to build a new product. The majority of time is spent seeking

information," Howard says. "Anything that can be done to reduce this time is going to cut operational costs for the organization. Secondly, further cost savings can be achieved by integrating systems. The days of monolithic disconnected platforms are over."

Just as email was the most recent revolution in cutting communication costs, Howard foresees the

consolidation and unification of collaboration technologies (including videoconferencing, email, and new social technologies) as the next big step. By maximizing the reuse of information, capturing and analyzing organization data, and flattening the organization through the use of collaboration tools, workers will waste less time seeking knowledge that already exists, he says.

Upcoming IT Events

For more Upcoming IT Events, see page 3.

PASS Wisconsin SQL Server User's Group

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VMware Vsphere: Fast Track
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COVER FOCUS

Budget-Friendly Equipment Acquisition

Tweak Your Buying Strategy, Negotiate With Vendors & Consider New Technologies

by Carmi Levy

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THE DEPTH AND BREADTH of the recession is driving significant and permanent changes to the way IT and data center managers make decisions. Even as the economy shifts toward recovery, long-held approaches to buying new equipment are being questioned.

Saving money and resources goes beyond focusing on the initial acquisition cost, however. It's no longer simply about getting the best price. A strategic approach to buying new equipment can drive long-term savings within IT and, just as importantly, throughout the organization it serves. Keep the following tips in mind before finalizing any acquisition deals for new technology.

avoid the need to replace the equipment as capacity needs grow. More transparent upgrade paths may cost more up-front but can save money in the long run.

Companies should also consider replacing equipment during a natural upgrade cycle, says Gold, as it is less disruptive than trying to buy a new piece of equipment midstream.

"For instance, if you know you are going to upgrade your Oracle database or SAP app installation, look at deploying it on a new piece of hardware at the same time and save the grief of having two different upgrades to be done," says Gold. "This can save a lot of time and labor and minimize lost productivity."

Avoid Single-Vendor Strategies

Sticking with one vendor can leave IT buyers with fewer choices—and a weakened negotiating position. "This usually costs companies more than at least having a potential bidding process from more than one vendor," says Gold. "This is not always possible, but it is still a preferred approach to having a single-vendor shop where you have no leverage on costs or terms."

Pat Furey, senior category manager for Ariba (www.ariba.com), suggests focusing negotiations on different layers of the channel. "By negotiating directly with OEMs for hardware, you can get closer to the source of supply and shave significant costs," says Furey. "VARs will command a higher margin, so limit the purchases there to additional services and peripherals they specialize in."

Furey also recommends committing to multiyear contracts with established long-term price management strategies built-in.

Don't Ignore Peripherals

Although the focus is typically on big-ticket equipment, peripherals can form the core of a stronger negotiation strategy.

"When shopping for peripherals, make sure to tie the purchases to other IT hardware and off-the-shelf software to get the very best deals," says Furey. "And don't get into an open-ended situation with VARs. It's critical to define the services VARs will provide before you start to negotiate on price."

Consider Going Virtual & Thin

Instead of replacing conventional servers and workstations with updated servers and workstations, use hardware renewal as an opportunity to question the architecture in the first place and plan a move to more

Key Points

- Focus on TCO and not just acquisition cost. Trying to save money on cheaper but less flexible alternatives can cost IT significantly more in the long run.
- Use more than one vendor for different areas of infrastructure spend to avoid lock-in and maximize ongoing negotiation leverage.
- Wherever possible, schedule major software projects to coincide with hardware refresh cycles. Combining projects in this manner can minimize disruption and maximize project management economies of scale.

efficient infrastructure. Loyola University Chicago, which used a new data center build-out in 2007 as the basis for initiating a campus virtualization project, has been reaping significant operational savings ever since. CIO Susan Malisch says Loyola has virtualized 60% of its servers so far, and for those devices, the university is reaping a 70% reduction in server hardware costs.

Malisch expects similar benefits as the university replaces PCs with thin clients.

"One additional benefit of virtualization and thin clients is the expanded tech refresh cycle," says Malisch, who adds that the university anticipates extending its current refresh cycle. Disaster recovery and business continuity can also benefit from this change in acquisition strategy thanks to reduced hardware requirements at the recovery site and simplified failover needs.

Factor Equipment Disposal Into Acquisition Plan

As much as you simply want to get rid of the old to make room for the new, don't ignore the inherent value in seemingly obsolete equipment. Cliffie McKay, director of operations for DMD Systems Recovery (www.dmdsystems.com), says asset management companies can help IT planners recover significant remaining value from existing equipment and set the stage for others to derive value from used equipment.

"An asset management company can provide you with a very good idea of any costs that may be incurred as well as the 'reuse' value associated with your IT equipment," says McKay. "Typically, equipment that is on a three- to four-year cycle offers the highest return for many companies."

Incorporating reuse into the acquisition plan does more than add to the bottom line, says McKay, who cites reports that so-called second use of a 4-year-old computer for an additional four years can be as much as 20 times more efficient than building a new machine. □



Forget About Acquisition Cost

Up-front capital investment often represents a small fraction of the total cost of ownership. Although TCO has become a far more pervasive basis for acquisition planning over the past decade, the tumultuous economy, spiralling energy costs, and a growing realization of the previously unmonitored soft costs of IT are reinforcing its importance.

"Most companies focus on getting the lowest cost on equipment when they should be focusing on the lowest TCO," says Jack Gold, president and principal analyst of J.Gold Associates. "That means getting more reliable equipment, even if it costs a bit more."

Gold says some vendors will even throw in a maintenance contract to sweeten the deal. "This can offer substantial lifetime cost savings to the end user," he adds.

Buy For Tomorrow's Needs, Not Today's

Companies considering keeping equipment for more than three years should consider buying more than they think they'll need.

"This is important because many companies only buy what they currently need and find in a couple of years they have outgrown a perfectly good piece of equipment," says Gold, who also recommends buying equipment that can be upgraded to

Top Cost-Cutting Tip: Take Advantage Of Ongoing Market Turmoil

The still-troubled economy need not be a bad thing. In any down market, vendors are often more willing to negotiate savings that would simply be unimaginable during better times.

"Tight capital markets and increased competition among hardware sellers is good news for buyers in the data center space," says Pat Furey, senior category manager for Ariba (www.ariba.com). "By keeping an eye on the market and seizing on sourcing opportunities, hardware buyers can upgrade their systems' performance while keeping costs in line."

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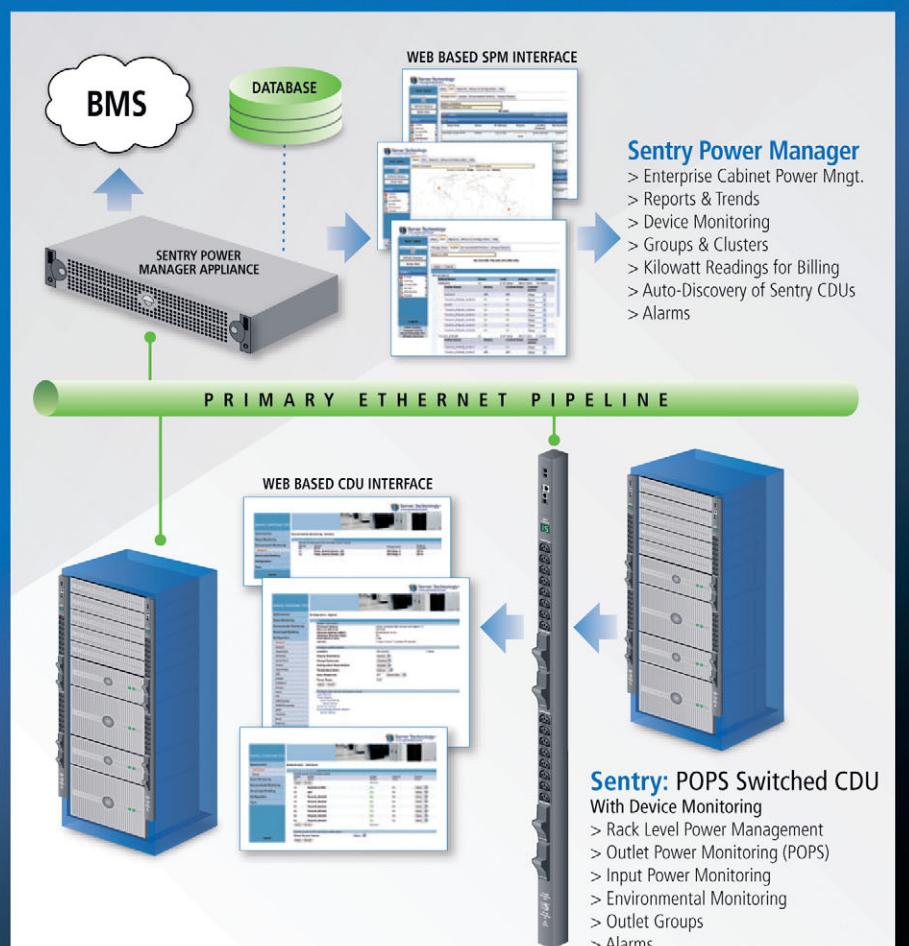
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I Study Examines Earnings Of H-1B Holders

New research from the University of Maryland found that, when it comes to salaries for IT professionals, foreign workers with H-1B visas earn more than their U.S.-born counterparts. The study's findings refute the anti-H-1B argument that the visa program has reduced American IT wages by letting corporations hire skilled laborers for lower wages than they would have to pay American workers. Overall, the researchers indicated that workers without U.S. citizenship earned 8.9% more than U.S. citizens. The data was taken from the IT salary surveys conducted from 2000 to 2005 by *InformationWeek* and Hewitt Associates.

I AMD Gains In Graphics Market At Nvidia's Expense

According to a report from Mercury Research, chip maker AMD gained 8.2 share points in the discrete graphics market in Q1 2010, jumping to a 42.1% share overall. Interestingly, AMD's gains were equal to the losses of rival company Nvidia, which lost exactly 8.2 share points for discrete graphics. In the overall graphics market, which includes both discrete and integrated graphics options, AMD gained 2.8 points, while Nvidia's overall share dropped by 4.8 points. Mercury Research cited the popularity of the ATI Radeon HD 4800 and HD 5000 series of discrete graphics cards as the main reason for AMD's jump in market share.

I WinXP SP2 Support To End Soon As Companies Scramble To Update

About half of the companies currently running Windows XP are using a version for which Microsoft is about to end its support. Because IT staff tend to stick with what works and to delay large-scale migrations unless there's some compelling reason to upgrade, hundreds of thousands of enterprise PCs have not been switched to Windows 7 or Vista, and many are running earlier versions of Windows XP, having not yet updated to SP3. Microsoft's planned July 13 retirement of WinXP SP2 puts business users in a tough spot, as those companies will now be forced either to update to SP3 or to upgrade to a newer version of Windows.

I Lenovo Ends Its Fiscal 2010 On A High Note

Chinese PC maker Lenovo recorded profits of \$129 million on revenue of \$16.6 billion for fiscal year 2010, due largely to a 59% rise in the number of units shipped during the fourth quarter. The turnaround compares with a \$226 million loss last year. The company says that the improvement is a reflection of both a healthier economy and continued strong demand for computers. The company's gross margin—the difference between revenue and the cost of goods sold—actually slipped by 1.5% for the full year, which the company attributed to a stronger U.S. dollar and to high prices for components.

I Mobile PC Shipments Up

According to research firm Gartner, shipments of mobile PCs worldwide in Q1 2010 were up 43.4% over Q1 2009, representing sales of about \$36 billion. Although commercial sales are rising, the consumer market is still responsible for most of the growth. HP is still the No. 1 vendor worldwide with 19.2% of the market, although Asus (fifth place) and Acer (second place) made significant gains in market share, with the former boasting a 113% rate of growth and the latter showing a 48.4% increase. Dell and Toshiba—third and fourth, respectively—round out the list of the top five PC vendors worldwide.



Save On Power & Cooling

Pinching Pennies Doesn't Mean Cutting Back On Efficiency

by Chris A. MacKinnon

WHEN CFOS AND CEOs tell IT and data center managers to trim the excess off their budgets, power and cooling are two of the usual targets. Although they are both integral players in data center efficiency, they can't hide forever when cost cutting is the name of the game. Here are some tips and advice to use when you need to do more with less with power and cooling.

Cut Down On Clutter

De-cluttering the data center is something that any organization should consider. "What is in the room that does not absolutely need to be in the room?" asks Melanie Davy, research analyst for Info-Tech. "For example, fax servers or equipment that does not require an extra layer of redundancy can be moved out of the data center and into the wiring closet."

Davy says the energy savings here lies in standby power, where equipment that does not require a constant supply (and is not mission-critical) no longer consumes data center power.

Efficiency Is Key

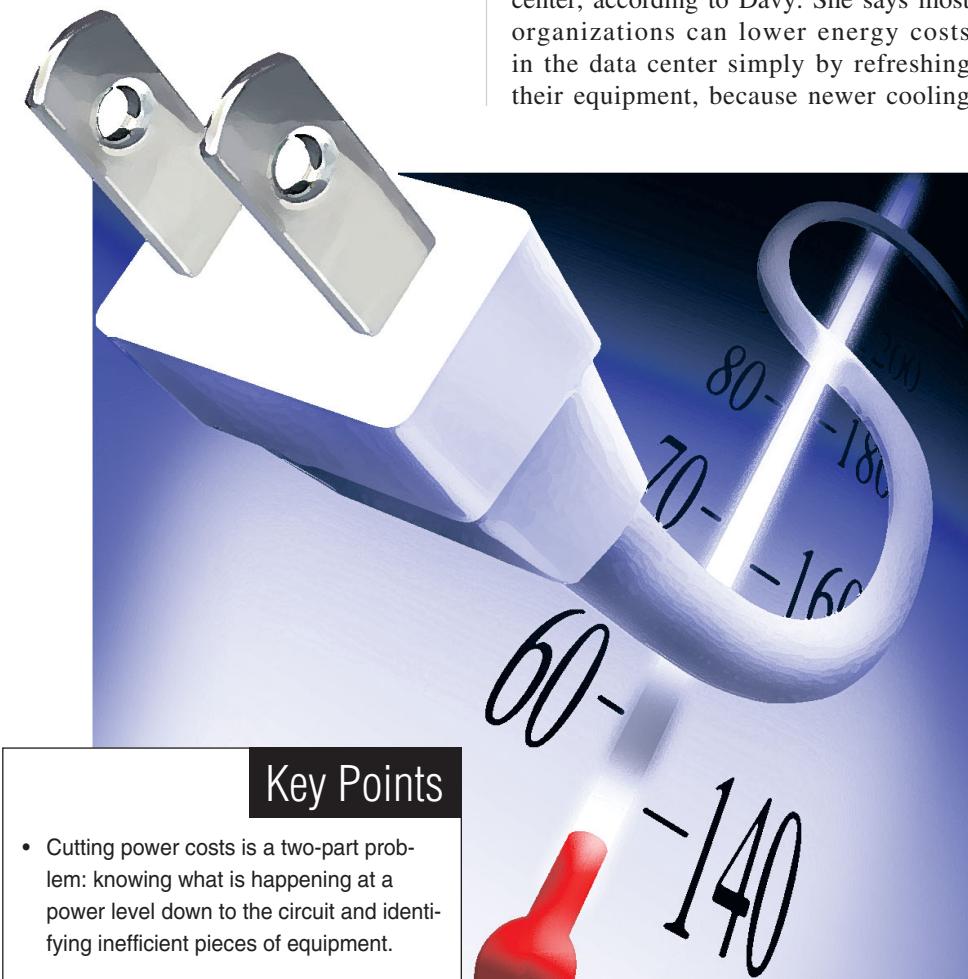
For Stephan Prueger, vice president of sales with TrendPoint Systems (www.trendpoint.com), it's all about focusing on efficiency. "We're talking about the efficiency of IT equipment, the cooling scheme, and the AC equipment," Prueger says, adding that cutting costs in power is really a two-part problem: knowing your power usage at a granular level and identifying which equipment is inefficient. "You need to know what is happening at a power level down to the circuit. Circuit granularity enables you to monitor not only the racks but all the devices in the data center, including the air conditioning," Prueger says. "Identifying where most of the wattage is going identifies the hot spots and allows you to balance the load and match the cooling. Now when you have power factored at the circuit level, you can identify inefficient pieces of equipment." This lets you narrow down what equipment is inefficient and replace or tune that equipment, he says.

David Matusow, a Centre of Excellence architect at SunGard Availability Services (www.availability.sungard.com), says companies must start to review their energy demands now and not wait until a hard limit is reached. "Reviewing now provides a company with the time and insight required to make adjustments prior to hitting a solid stop point," he says. "If a power limit is reached, a company must make difficult choices—are data center

plans postponed or priorities? What is needed is an effective way to measure the current state and project impacts and demands." Matusow says capacity planning must include not only processor cycles but also infrastructure requirements.

Small Changes, Big Savings

Rick Berendes, co-founder and product manager at Data Center Resources (www.datacenterresources.com), says when it comes to cutting cooling costs, increasing the supply set points for CRAC (computer room air conditioner) units can have a huge impact on cooling costs. "At higher



Key Points

- Cutting power costs is a two-part problem: knowing what is happening at a power level down to the circuit and identifying inefficient pieces of equipment.
- Increasing the supply set points for CRAC (computer room air conditioner) units can have a huge impact on cooling costs.
- Small efforts such as monitoring usage, sealing airflow, and keeping equipment up-to-date can add up to big savings.

set points, cooling units do not run as hard or as often," he says. "The trick is to be able to do this while maintaining suitable conditions for servers. That is the reason we are seeing data centers do whatever they can to make their existing cooling infrastructure as effective as possible."

According to Berendes, common practices include sealing cable openings, using blanking panels in unused rack spaces,

Top Cost-Cutting Tip: Bring IT & Facilities Together

To gain a full vision of the true cost of the data center and provide better serviceability, some companies are now merging the facility and IT groups. According to David Matusow, a Centre of Excellence architect at SunGard Availability Services (www.availability.sungard.com), this allows the IT department to gain insight into the total cost of the data center. "This also enables IT to manage the facility costs along with their existing responsibilities," Matusow says. "By joining forces and responsibility, more effective and holistic decisions can be made on how best to support the company today and into the future."

and directing airflow in supply and return plenums and aisle containment. "These approaches can help managers get the most out of their cooling capacity, which may allow them to start to increase set points," he adds. "However, it is important to have a real-time temperature monitoring solution in place, as well. This will allow a site to incrementally ratchet up supply temperatures while ensuring that servers are not in jeopardy along the way."

Stay Up-To-Date

Cooling the data center can amount to about 50% of the operating cost in the data center, according to Davy. She says most organizations can lower energy costs in the data center simply by refreshing their equipment, because newer cooling

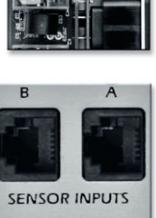
infrastructure is more efficient than older equipment. "For example," Davy notes, "the average life span of a data center is between seven and 12 years. During that time, equipment and technology will change two to three times (cooling and other IT equipment). A typical commercial CRAC unit used in data centers 10 to 15 years ago would have a maximum capacity of 7 watts per square foot."

However, according to Davy, basic CRACs today operate at around 50 watts per square foot, and some higher-end precision and balanced solutions can achieve up to 250 watts per square foot. She adds, "Today's air exchange precision systems pass more than 500 cubic feet per minute per ton, while previous technologies might pass as little as 350 cubic feet per minute per ton."

Prueger says when you match the cooling to the wattage (directly proportional to heat), you more efficiently cool your equipment. "Take the dynamic load from the power monitoring in your data center and match it to the amount of cooling you are pumping into your data center to efficiently maintain a steady temperature," he says, adding that more efficient systems result in lower PUE (power usage effectiveness). P

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by Tessa Warner Breneman

An Affordable, Energy-Efficient, Ceiling-Mounted A/C Designed For Server Rooms

BY NOW YOU undoubtedly know that, with all your servers and other machines running nonstop, it's easy for your data center or server room to reach temperature levels high enough to damage heat-sensitive equipment. Because damaged equipment is costly to fix and could result in data loss, you need a cost-effective cooling solution to address temperature issues in your data center.

The MovinCool CM25 offers a total cooling capacity of 25,000BTU/h, making it the industry's first ceiling-mounted, self-contained air conditioner with that high of a cooling capacity, and its \$6,995 price tag is lower than conventional solutions such as precision cooling systems. The CM25 also provides a high sensible cooling capacity of 18,900BTU/h and is made specifically for server rooms and other environments with dense heat loads. The air conditioner boasts a SEER (Seasonal Energy Efficiency Ratio) rating of 14, due in part to energy-saving elements such as its variable-speed inverter compressor and inverter fan motors. The CM25 also boasts green features such as R-410A refrigerant and RoHS compliance.

With a built-in mounting bracket, flanges, and vibration isolators, the CM25

is easy to install into any environment with all the standard tools you likely already have. Just 20 inches high, the CM25 is designed to fit above drop ceilings and in server rooms with limited floor



MovinCool CM25

A ceiling-mounted air conditioner that provides an energy-efficient cooling solution for data centers, server rooms, and other environments with high heat loads.

\$6,995

space. And because it is self-contained, the CM25 won't need refrigerant connections, further reducing installation costs.

The wall-mounted controller, which comes standard on all CM25s, provides advanced communications, monitoring, and self-diagnosis, so it's easy for IT personnel to manage. Plus, it works with your fire alarm controls and connects to the building control system for safe and simple management.

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KVM Switches

Product	ATEN KN4140v 5-User CAT5 IP KVM	ATEN KH2516 16-Port 2-User CAT5 KVM	ATEN KH1516i 16-Port 1-User CAT5 IP KVM
Description	<p>The KN4140v offers built-in remote access functionality from up to one location and four remote operations to help you monitor data center servers over the Internet. The switch also supports audio.</p> <ul style="list-style-type: none"> • Remotely monitor and control all installed devices through a secure Web portal • Supports virtual media with file transfer functionality • Audio transfer via TCP/IP and dual onboard network interface cards • Out-of-band access with external modem support for BIOS-level troubleshooting <p>Best For: Workers who need access to large media repositories that are housed in servers in another room or at a different location.</p> <p>Price: \$7,199.95</p>	<p>ATEN's KH2516 features 16 computer port configurations for complete KVM connectivity from a CAT 5e/6 cable. The KH2516 is housed in a 1U form factor for convenient rack mounting.</p> <ul style="list-style-type: none"> • Capable of expansion to provide control of up to 4,096 computers • Dual bus consoles for two simultaneous and independent operators • CAT 5 links up to 130 feet between KVM and servers • Allows for port-by-port setup of user account access rights <p>Best For: IT administrators who need to control a large group of computers from a single KVM.</p> <p>Price: \$799.95</p>	<p>This control unit uses TCP/IP as a communications protocol to let IT staff access computers connected to the Internet.</p> <ul style="list-style-type: none"> • A message board feature allows logged-in users to communicate and take exclusive control of the KVM functions • CAT 5 to reduce cable clutter • Dedicated chain ports let you expand support as your enterprise expands • 16 ports <p>Best For: Administrators looking for a KVM switch that can provide IP access via LAN, WAN, or the Internet.</p> <p>Price: \$949.95</p>
Contact	(888) 999-2836 www.aten-usa.com	(888) 999-2836 www.aten-usa.com	(888) 999-2836 www.aten-usa.com

Product	Belkin F1DN102D OmniView Secure DVI KVM Switch	Belkin F1DA116Q OmniView PRO3 PS/2 16-Port Switch	Belkin F1DA208Z OmniView Dual-User PRO3 8-Port KVM Switch
Description	<p>Designed for military, intelligence, and federal agency installations, this two-port OmniView Secure DVI KVM Switch is NIAP-certified to ensure data integrity when switching between computers operating at different security levels.</p> <ul style="list-style-type: none"> • Supports Common Criteria EAL 4+ and augmented with ALC_FLR.3 • Dual-link DVI-D delivers video resolution up to 2,560 x 1,600 • No memory buffer • Nonreprogrammable firmware <p>Best For: Those who must conform to the latest security protocols when switching between two computers.</p> <p>Price: \$499</p>	<p>Designed for small to medium-sized server rooms, the OmniView PRO3 includes Belkin's micro-cabling technology to reduce cable bulk by up to 55%. It also provides continuous server monitoring with programmable AutoScan and hotkeys.</p> <ul style="list-style-type: none"> • Flash-upgradable firmware • Dedicated daisy-chain ports let you expand without sacrificing system ports • On-screen display to simplify viewing and switching • Works with other OmniView PRO Series KVM or SMB KVM switches to support up to 256 servers <p>Best For: Server rooms, branch locations, and test development labs.</p> <p>Price: \$429</p>	<p>With the Dual-User PRO3, two IT staff can access the KVM switch at the same time to communicate with up to eight servers from two different consoles. If you're in a mixed server environment, you'll benefit from the USB and PS/2 connectivity options.</p> <ul style="list-style-type: none"> • On-screen display to let you assign names for easy switching among connected servers • Hotkeys to switch servers using keyboard shortcuts • AutoScan helps you to monitor the activities of the connected servers • 1U rack-mountable design <p>Best For: Enterprises that regularly require access for two administrators to a set of servers.</p> <p>Price: \$649</p>

PRODUCT SPOTLIGHT

PHYSICAL INFRASTRUCTURE

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Nathan Lake

Black Box KV1701A ServSwitch Octet



The ServSwitch Octet includes Octoware software that lets you monitor complete system setup via IP access, scan connected devices, edit user profiles, and flash upgrade system components. If the network link fails, the ServSwitch Octet retains protection through its own proprietary security settings.

- Supports connections up to 984.2 feet over solid CAT 5, CAT 5e, or CAT 6 cabling
- Maximum resolution of 1,600 x 1,200 at 100 feet and up to 1,280 x 1,024 at 984.2 feet using the Enhanced Video User Station
- Security restricts access to authorized users
- Capable of supporting eight users and the ability to control 32 servers

Best For: Test and demo labs as well as design and broadcast environments.

Price: \$6,119.95

(724) 746-5500
www.blackbox.com

Black Box KV2004A ServSwitch Wizard DVI Dual Link



The KV2004A supports resolutions up to 2,560 x 1,600 at 60Hz, and it also provides true DDC EDID support. There are ports for dual-link DVI-D, single-link DVI-D, and VGA.

- Can be switched at the same time as other ServSwitch Wizards
- Stereo audio can work independently from the video signal
- Able to upgrade the ServSwitch Wizard via intelligent options port
- USB 2.0 protocol works with emulated keyboard and mouse controls

Best For: Those who need to share HD or higher-quality video with up to four workstations.

Price: \$489.95

(724) 746-5500
www.blackbox.com

Black Box KV2404A ServSwitch Wizard Dual-Link DVI Quad Head With USB True Emulation



With the Quad Head, you can control four computers and share USB peripherals among each PC. Each of the video heads supports dual-link DVI video at up to 450 megapixels per second, and you can switch DVI video, keyboard, and mouse streams to multiple PCs.

- Can switch attached peripherals to a computer system or link them to separate systems
- Supports resolution of 2,560 x 1,600
- Two independent USB 2.0 channels to switch out peripherals
- USB True Emulation provides real profiles of device for advanced mouse and keyboard functionality

Best For: IT administrators, graphic designers, and broadcast studio professionals who require quick, reliable access to multiple CPUs and video channels.

Price: \$1,595.95

(724) 746-5500
www.blackbox.com

Black Box KVT517A-1UV ServView V KVM Tray



This dual-rail console features a 17-inch LCD panel that supports resolutions up to 1,280 x 1,024. It offers a keyboard and touchpad, and the KVM switch module connects to VGA and either PS/2 or USB servers.

- Can cascade the console with other KVM switch modules
- Slim drawer pulls out, folds up and down, and securely latches to save space
- Console automatically shuts down when LCD is at a 45-degree angle
- Sun native resolutions supported for multi-platform functionality

Best For: Enterprises that require a compact console to manage servers.

(724) 746-5500
www.blackbox.com

logear GCS1792 2-Port HDMI KVM Switch



If you require HD resolution and surround-sound audio, the logear GCS1792 is for you. It's a two-port switch that supports HDMI 1.3b, HDCP, Dolby True HD, and DTS HD Master Audio.

- Display Emulation Technology to maintain video resolution when switching between PCs
- Two USB 2.0 ports to share peripherals, such as an external hard drive
- Supports a variety of HD resolutions
- Asynchronous switching lets you independently switch applications between connected PCs

Best For: Graphic designers and high-end video editors that need to switch among multiple PCs for working with special effects and rendering.

Price: \$299.95

(866) 946-4327
www.logear.com

logear GCL1816KITP



This 17-inch TFT LCD monitor provides a 16-port KVM switch and the necessary PS/2 KVM cables. The retractable monitor features a built-in keyboard and touchpad, but you can also add an external USB mouse.

- Includes eight 6-foot PS/2 cables and eight 10-foot PS/2 cables
- Fits into a 1U, 19-inch rackmount space
- Supports Windows, Mac, Sun Solaris, and Linux
- Two levels of password protection

Best For: Those who need to increase space and productivity within the data center.

Price: \$1,879.95

TRENDnet TK-804R 8-Port USB KVM Switch



This rackmount 8-port KVM switch supports USB and PS/2 interfaces on the console side and USB on the PC side. Users can switch between PCs using hotkeys, push buttons, or the on-screen display for flexible management.

- 8-port stackable KVM switch with VGA and USB connection to computers
- Device monitoring with adjustable Auto-Scan, audible feedback, and the ability to cascade up to 64 computers
- Supports most operating systems and advanced mouse designs

Best For: IT staff looking for an affordable KVM switch with an on-screen display to make it easy to manage multiple PCs.

Price: \$265

(866) 946-4327
www.logear.com

TRENDnet TK-IP101 1-Port KVM Switch Over IP



TRENDnet's 1-Port KVM Switch Over IP eliminates the need to physically be in the server room to troubleshoot, reboot, or edit preboot functions.

- Manage multiple servers from your network or remotely from any Internet connection
- IP-based remote control server management for Windows- and Java-based clients
- An intuitive Web interface provides controls from BIOS-level functions to Windows-based applications
- With up to 16 active user accounts, the TK-IP101 supports four concurrent logins

Best For: Data centers looking for cost-effective remote server management for multiple users.

Price: \$499

(310) 961-5500
www.trendnet.com

Google Seeks Green Tech That Pays Off

Is it possible for renewable energy sources to supplant our dependence on fossil fuels? The answer is blowing in the wind. Google is no stranger to green initiatives, having invested hundreds of millions in solar, solar thermal, and geothermal technologies and companies, but the subject of its latest green spending spree is a pair of wind farms in Barnes County, North Dakota.

The official Google blog recently reported that the search giant spent \$38.8 million on the Ashtabula Wind I and II energy farms, which are utility-scale renewable energy projects. What's unique about Google's latest renewable energy endeavor is the fact that the money came directly from Google Inc. rather than the company's philanthropic arm, Google.org, which funded the company's previous pledges. According to Google spokesperson Jamie Yood, "You can think of it as a way to diversify our cash holdings while investing in an area that we think is important." According to Yood, wind power is one of the lowest-cost renewable energy sources available, which makes it a promising investment opportunity. Unlike Google's other green initiatives, which were meant to spur innovation and advance research, the North Dakota wind farm is a fully operational energy producer, enabling Google to "earn an attractive return as well as free up capital to enable future wind projects."

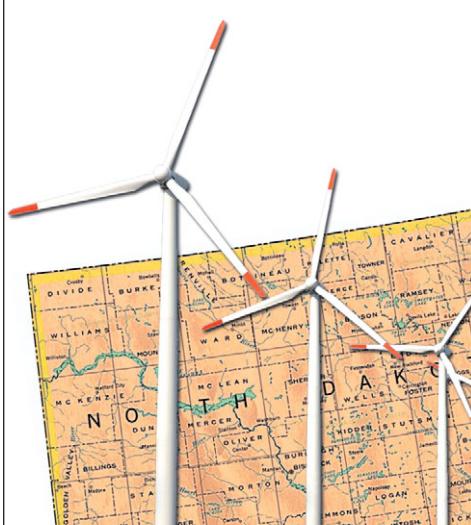
Profit Motive

These wind farms are attractive from a profit standpoint because they utilize existing transmission capacity to get the clean energy to local consumers and businesses and because they are populated with some of the most efficient turbines currently in operation. The turbines employ blades with 15% more swept area than older turbines, leverage control systems that remotely monitor and maintain the farms' energy production, and are capable of independently adjusting blade pitch angles on the fly to generate the most energy under any conditions. The wind energy-capturing turbines are especially good at taking full advantage of the area's excellent wind resources.

Google is also interested in wind energy as a means of reducing the company's dependence on fossil fuels. In 2007, Google launched its RE<C initiative, which aims to create utility-scale renewable electricity more cheaply than coal. Although we're not there yet, Yood believes that with "more technological investment and smart policy supporting the innovation pipeline," RE<C is attainable at a utility scale.

Although wind energy does appear to be at the forefront of viability, Yood says, "We do plan on exploring future investment opportunities in renewable energy projects."

by Andrew Leibman



Monitor Power Usage Effectiveness

Determine How Much Energy You're Using & Get The Right Tools To Cut Down Costs

by Holly Dolezalek

• • •

"IF YOU CAN'T MEASURE IT, you can't manage it." That statement is debatable in some areas but not when it comes to power usage. If you don't know how much you're using, you certainly can't manage how efficiently you're using it. But once you do know, the tools are there for you to not only cut down on the electric bills but also make the power you do use go further.

"Costs of energy in the data center are skyrocketing, and power for cooling is outpacing the cost of new service spending," says James Cerwinski, senior product manager for power management at Raritan (www.raritan.com). "That's fueled by an explosion in power heat densities, because people are buying more powerful systems that put out more heat per square foot."

For that and other reasons, interest in power usage efficiency has also been growing exponentially. And if you've read anything about the efficiency of power usage in the past few years, you've no doubt read about the PUE (power usage effectiveness) metric.

The Green Grid came up with it in 2007 and promoted it as a way for data center managers to get an idea of how efficient their data centers were. It's been bandied about as a cure-all and mocked as a useless number, but, as always, the truth is somewhere in the middle: The PUE is a good place to start.

Starting With A Baseline

"The PUE is an important tool to get a baseline established," says Joe Polastre, CTO and co-founder of Sentilla (www.sentilla.com).

The PUE is simple: It's the ratio of how much power goes into the data center to how much of that power is used to run that data center's IT equipment. A data center that uses 1MW (megawatt) and uses 0.5MW to run its IT infrastructure has a PUE of 2. When expressed as the inverse, that number becomes the DcIE, or Data center Infrastructure Efficiency ratio. In this case, it's 0.5, which is easier to understand: It means the example data center uses 50% of its power for the actual IT equipment.

The PUE or DcIE doesn't tell you whether you're efficient, but it does tell you what you're doing so you can decide what efficient means to you. For that reason, Polastre explains, data center managers are starting to use old-style mainframe metrics that fell out of use a long time ago, such as bits per kilowatt. "There's a convergence of information between the IT side and the facilities side at some organizations," he says. "The IT people know how much work is being done, and the facilities people know how much power is being used at the facility for cooling and other tasks, and so there are good ways to correlate

the work being done with the power being used, like bits per kilowatt or used storage (terabytes) per kilowatt."

Whatever metric you use, the first step in measuring your power usage efficiency is to get a baseline of what you actually use and how you use it. Only a baseline will tell you where you need to go and how you can get there, even if getting it means walking around with a clipboard and writing down numbers with a pen.

Efficiency Or Efficiencies?

It might be helpful to think of power usage efficiency as more than a single number. Efficiency applies to several areas in different ways. For example, data centers use about 50% of their power on IT equipment, while another 43% goes toward cooling. Obviously, a data center can be efficient in its equipment and not in its HVAC or vice versa.

For that reason, you may want several meters or sensors, which can keep track of your cooling system and the power used by the IT equipment and other power draws. For example, there are PDUs (power distribution units) that keep track of how much power is going through every outlet in the unit and the unit as a whole.

A meter that tracks the cooling system will tell you not only how much power it's using but also whether that amount is trending upward over time. "As an asset becomes less efficient, its consumption increases," says Scott Beaver, director of marketing for Prenova (www.prenova.com). "So increased consumption might be a signal that proper maintenance isn't being done on the HVAC, so the responsible parties may not be cleaning the coils or changing filters regularly. Or it might mean that a compressor is about to fail. Watching the power draw over time will allow you to take more proactive action on these situations."

Meters also allow you to be more proactive on a daily basis, Beaver explains. "If you don't have a meter yourself, then you're waiting on utility bills for your data, and you may have a problem for six to eight weeks before you know about it," he says. "Meters are probably not that expensive compared to the amount of energy you're using in your data center."

But don't get swept up in how much you can know; give some thought to what you really need to know. For almost any metric you want data on, there's probably a sensor for it, but that doesn't necessarily mean that the data it gathers will be truly useful for you. "The more specific you want to get, the more data and the more sensors or technology you'll need," Beaver says. "You have to ask whether it warrants the investment you'll have to make to get to that level of certainty."

Link Power To Work

For that reason, it might be a good idea to start thinking about how you can make

Key Points

- Before you can become more efficient, you have to establish a baseline for your power usage.
- Invest only in monitors or sensors that give you useful data; you don't need to monitor everything.
- Once you've tracked your data for a while and know where the power is going, set realistic goals for using power more efficiently.

a more direct connection between the work that has to be done and the power that's used to do it. It's the science of figuring out what efficiency actually means for your company and the way it does business.

Some organizations have done that by making IT responsible for its power bill. For example, some companies require purchases to factor in the three-year cost of energy. "I know of a manufacturing company that started buying smaller trucks practically overnight once the shipping department [was responsible] for paying the fuel bills," Polastre says.

Like so many other IT initiatives, you have to figure out where you are in order to figure out where you're going. Gather the data that tells you, at the watt or the kilowatt level, how much power you're using and what you're using it for. Once you have a baseline, you can decide on goals for what you want that picture to look like in three months or a year.

"There's value in gathering data on your environmental conditions, which you can then translate into a realistic goal for efficiency," Cerwinski says. "If you measure the temperature at the inlet of the rack, you know whether you're cooling or overcooling. Then, if you know that you could save 4% in energy consumption for every degree you raise the temperature, that's a good area to look at if you find you're overcooling."

TOP TIPS

- Check with your utility company to find out how they help businesses become more energy-efficient.
- Work with your facilities department to get the numbers you need on where your power is going.
- PDUs that monitor at the outlet level are good tools for monitoring power usage.
- If you don't want to install physical meters, consider software packages that estimate power usage.
- Start thinking about power usage now, so you're ready if upper management decides to make you responsible for the power bill.

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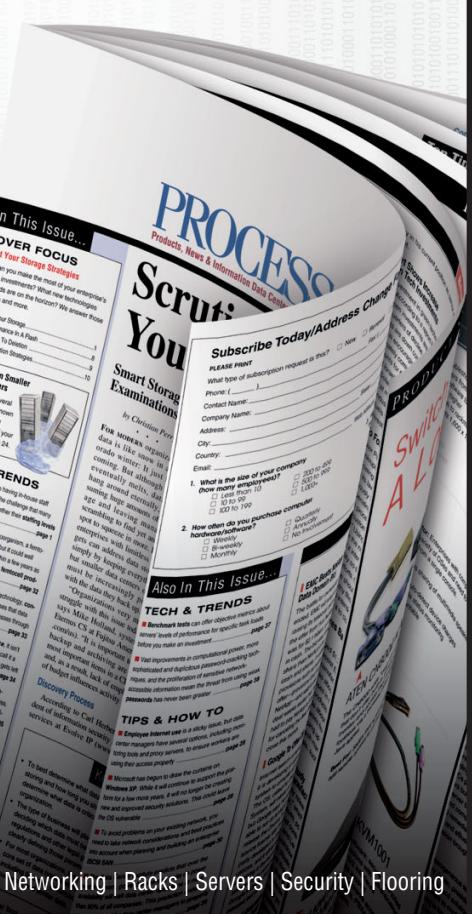
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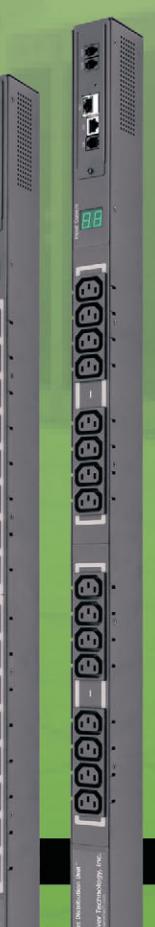
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Palm VP Accepts Position With Google

Matias Duarte, Palm's vice president of human interface and user experience, announced that he is leaving Palm to take a position at Google as its director of user experience for Android. Duarte is credited with engineering the user interface on Palm's WebOS. Previously, Duarte worked at Helio before moving to Palm in 2007. Duarte's job switch comes on the heels of HP's purchase of Palm in April; during the acquisition, HP said it would invest in product development and marketing for the WebOS and that it looked forward to working with Palm's engineers and developers. Palm CEO Jon Rubinstein has agreed to stay with HP for now, but it's unclear if he has committed to a timeframe.

House Passes \$84 Billion R&D Bill

The U.S. House of Representatives has reauthorized a bill that allocates \$84 billion in funding to research innovations in science and technology. The America Competes Reauthorization Act of 2010 provides funds over the course of five years to the NSF (National Science Foundation), the Department of Energy Office of Science, the National Institute of Standards and Technology, and similar organizations. The NSF in particular could gain access to more than \$40 billion over five years for investments in its education and research programs. The bill supports the Advanced Research Project Agency, an organization that supplies federal loans to SMEs committed to pursuing new technologies.

Server Shipments Grow, Revenue Increases

Worldwide server shipments increased by 23% in the first quarter, compared to the same period a year ago, Gartner reported. The sales led to a 6% increase in revenue. Shipments for x86-based servers grew by 25.3% in units, and RISC/Ianum Unix servers declined by 28.5% in units. Expected areas for growth, such as Asia-Pacific, forged ahead, and the United States produced results that were higher than expected, at 28.6%, compared to last year. HP remained the top server vendor, marking a 26.6% increase in units shipped and a 15.9% increase in sales. Oracle documented the largest decline in units sold, at 29.5%.



Facebook Is Web's Most-Visted Site, Google Says

No other Web site was visited more often than Facebook's in April 2010, according to Google's DoubleClick Ad Planner list of the 1,000 most-visited Web sites. The social networking site had 540 million unique users who viewed 570 billion pages, dwarfing the list's No. 2, Yahoo.com, which had 490 million unique users and 70 billion page views. Interestingly, Microsoft's Live.com, MSN.com, and Microsoft.com, which are in third, fifth, and sixth places on the list, respectively, together account for 880 million unique visitors but just 53.3 billion page views. The list does not include Google itself, some of its sites, and adult Web sites.

Lower Your PUE

What Steps You Should Take To Reduce Energy Consumption

by William Van Winkle

• • •

THE IT COMMUNITY has known for a while that for every dollar most data centers spend on server hardware, another dollar gets spent on cooling that hardware. In terms of PUE (power usage effectiveness), this gets a value of 2. (Recall that PUE equals total facility power divided by IT equipment

Key Points

- According to Google's Bill Weihl, hot aisle containment is the single biggest step a data center can take in improving energy efficiency.
- Taking a few inexpensive steps can shave 20% off of a data center's energy consumption and drop PUEs to 1.5 or less.
- Focus on periodically refreshing your setup with more power-efficient components, and make sure that systems are being highly utilized. If they're not, consolidate them.

power, with 1 being considered a "perfect" score wherein all data center power would be consumed by IT hardware.)

As energy costs continue to rise and the environment's carbon tolerance recedes, there's every incentive to lower data centers' PUE values as much as possible. Here we focus on how to reduce those PUE scores in the first place.

Three Essential Steps

Google is widely thought to be among the most progressive and efficient of data center designers, with all but one of its primary data centers now scoring PUEs under 1.2. (Google's energy-weighted average in Q1 was 1.15, with the lowest individual facility reaching 1.10.) In his recent lecture at Green:Net 2010, Bill Weihl, Google's green energy czar, outlined three steps that organizations can take to reduce their cooling load and thus lower their PUEs.

First and foremost, Weihl says that hot and cold air zones must be separated. Cold zones (server fronts) should face each other in one aisle while hot exhaust zones (server backs) should face each other in the adjacent aisles. Google uses cheap plastic curtains and metal end caps to enclose hot air areas and prevent zone mixing, thus slashing cooling costs.

Next, turn up the thermostat. "Look at what the manufacturer says the rated inlet temperature is for the hardware," says Weihl. "If the server can take 90 degrees, turn your temperature up to 80, 85, close to 90. These aren't places where people spend a lot of time. Our data center techs often wear shorts and T-shirts." Google runs its data centers at around 80 F.

Not least of all, Weihl advises data center managers to give chillers a rest. This can take the form of outside air economizers or similar approaches, such as the evaporative cooling towers used by Google. These let warm water evaporate so that the water left behind gets cooled and is then returned to the data center equipment.

Even a facility that wasn't designed with efficiency in mind should be able to implement these three steps and reach a PUE of 1.4 to 1.5.

Jon Haas, director in Intel's Eco-Technologies Programs Office, part of the Digital Enterprise Group, confirms Weihl's assessment. Haas is on the board of directors at The Green Grid (www.thegreengrid.org), the industry consortium that helped establish PUE as a standard energy metric for enterprises. He notes one project The Green Grid did for the Environmental Protection Agency, analyzing the several small to medium-sized data centers supporting an EPA facility.

"They had hot and cold aisle setup," says Haas, "but when we looked under the raised floor, where the cold air comes in, they were using it for storage, so there were a lot of problems with getting that cold air to flow everywhere it needed to. Additionally, when we looked at the racks, the blanking panels in places where servers weren't deployed were open, which caused the mixing of hot and cold air and decreased the efficiency of the cooling solution. Just simple fixes like that allowed them to save 20% off their energy bill."

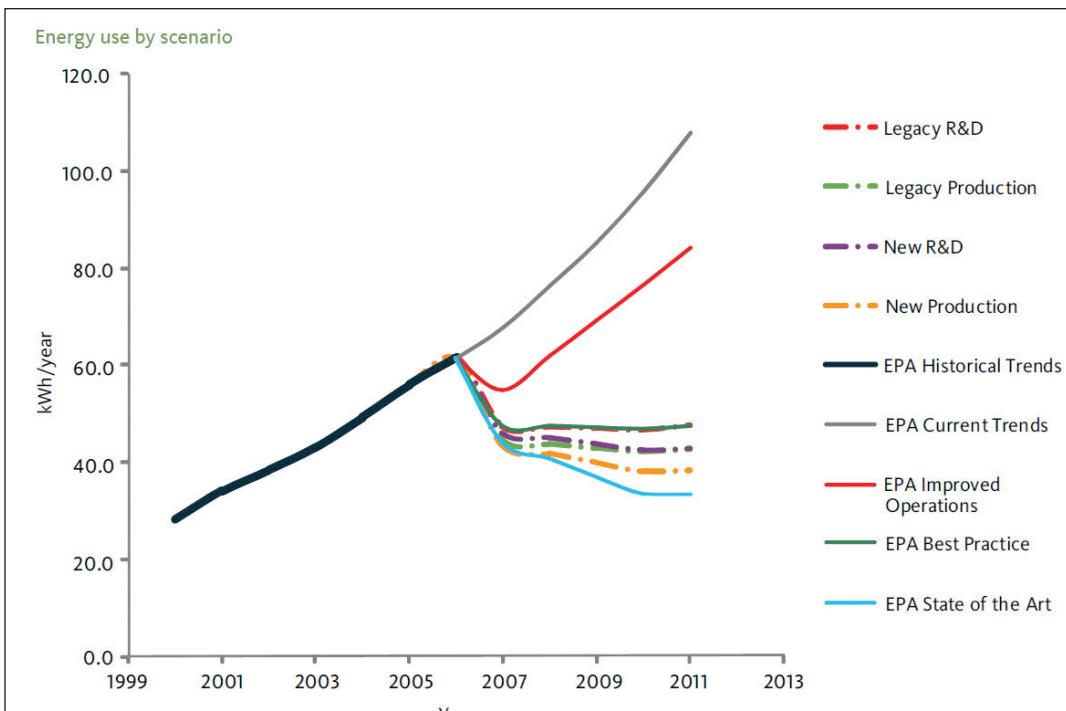
See The Big Picture

Remember that PUE is a tool, and it can be manipulated. Management that falls

In putting the PUE metric to work, it's important to address component- and system-level efficiency first so that broader-scale PUE results go toward accomplishing real goals and don't simply cultivate another form of waste. This is one reason why Intel advocates data centers performing a server refresh every four years. Google's Weihl says that in almost all cases, it is worth your money to buy a little more efficient component up front. "Then you'll save more than the cost of that in terms of reduced energy consumption over the life of the equipment."

One of the ultimate inefficiencies is leaving equipment on when it's not needed. Haas says it's common for enterprises to migrate applications onto new platforms but still leave the old systems running just in case. High resource utilization is critical for lowering PUE, and having idle systems running at full power makes no sense.

In addition, the fact that many systems run at full power at all makes little sense. Weihl says that most servers run with their power management capabilities turned off, a situation he compares to disabling the battery system in a hybrid car. Today's processors and other components are advanced enough to run at full performance when needed, even with power management turned on. When resource utilization falls, power consumption should fall with it, but



EPA projections for data center energy consumption are truly grim, unless businesses start implementing significant changes. By focusing on lowering PUE, data centers can keep their total consumption flat or even reduce it.

into the trap of demanding lower PUEs without taking the big picture into account might find IT staff "cheating" in order to get the desired numbers.

In a 2009 article called "Data Center Efficiency and the Limitations of PuE," Ian Bitterlin, director of the UPS Systems Division at Prism Power (www.prism-power.co.uk), points out that organizations that use power sources besides electricity (as with natural gas-powered chillers) can have extraordinarily good PUE ratings because only grid draw is accounted for in the PUE equation. "Building an inefficient data-processing facility and powering it from local hydro-power is not truly sustainable," Bitterlin notes in the article. "It is better considered to be a waste of a valuable carbon-free resource."

this isn't possible when efficiency features are shut down.

Another common area of efficiency waste is redundancy. Managers often work under the constraint of needing five-nines of uptime reliability, but this is often impractical in the real world, especially after considering costs vs. benefits. Eliminating unnecessary hardware redundancy will slash power consumption and lower PUEs.

Ultimately, it pays to think strategically and long-term. Short-sighted managers will simply buy new gear without having long-term plans and goals in place to guide energy decisions. This is a recipe for waste and frustration. Use PUE as one of several tools in crafting a long-term strategy for a more sustainable future. □

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FEATURED PRODUCT

Make Virtualization Work Without The Headaches

Netreo's Virtualization Visualizer Helps Administrators Visually Identify Performance Bottlenecks

by Joseph Pasquini

NOT THAT LONG AGO, the term virtualization seemed like just another industry catchphrase. Today, as organizations seek innovative ways to rein in operating costs while simultaneously preserving application uptime, the noise generated by the uptick of interest in server virtualization is just about deafening. In today's economic climate, the simple fact is that IT departments of all sizes are being



Virtualization Visualizer provides administrators with real-time visibility of clustered resources.

asked to do more with even fewer resources than in previous years. It is therefore no surprise that virtual operating systems—otherwise known as virtual machines, or VMs—are fast becoming a core component of the current information technology landscape.

Virtualization is not a new idea. In fact, the concept has been around since the era of the first mainframe systems when it was used to re-create end-user environments on a solitary piece of hardware. Since then, the technology has vigorously repositioned itself to harness the most recent advances in processing architectures and operating systems. Netreo (www.netreo.net) is one company that has an innovative approach to harnessing virtualization's potential.

Why Virtualization?

The reasons for the increased level of attention to virtualization are plentiful. Server utilization and consolidation are the principal benefits of virtualization. Consequently, they have become the cornerstones of money-saving initiatives within many of today's cost-conscious enterprises. By minimizing the



number of servers within their data centers and by using the remaining processing power to its fullest potential, the virtualization paradigm can translate into less power consumption and reduced cooling bills. Additionally, the technology allows IT departments to spend less time on otherwise lengthy system tasks, thus freeing administrators to tend to other pressing business needs.

Another dominant, yet sometimes overlooked, benefit of virtualization is its ability to nicely integrate into a company's disaster recovery and business continuity preparedness efforts, thanks to the technology's natural capacity to minimize outages and data loss. Virtualization increases application availability and can also considerably reduce the time it takes an organization to recover from a disaster. By making IT systems less prone to failures and by considerably speeding up the server restoration process, virtualization enables organizations of all shapes and sizes to mitigate downtime costs and keep applications available to their customers. Accordingly, reputations are undamaged and bottom lines ultimately remain unaffected.

Putting It All Together

Taken as a whole, virtualization continues to reveal additional tangible benefits—economic and administrative—the more the technology is ultimately deployed. As a result, virtualization has successfully broadened its relevance to enterprises looking for concrete ways to reduce expenditures and maximize productivity.

"Today's enterprise data center environments, eager to leverage the advantages of virtualization and private/public cloud-based computing, have witnessed massive proliferation of these technologies," says Kevin Kinsey, chief executive officer and co-founder of Irvine, Calif.-based Netreo. Founded in March 2000, Netreo is a provider of enterprise-class management and monitoring solutions.

"Compelling project drivers such as verifiable ROI, greater business continuity, and improved agility have pushed Fortune 1000 adoption rates beyond 95% over the course of just a few years," Kinsey says. "The technology, which employs a more dynamic, load-balanced, and self-healing approach to computing, marks one of the most profound megatrends in IT history."

Meeting The Challenge

According to Kinsey, although the efficiency and resiliency benefits of server virtualization are indisputable, the technology also presents system administrators with a whole new set of administrative challenges. To help organizations meet these challenges head-on, Netreo has introduced its Virtualization Visualizer (or V²) capacity planning and performance management solution. Priced at \$2,495, Kinsey says that the recently released V² is targeted squarely at enterprises looking to extract the highest level of return on investment out of their virtualized environments.

"Blind spots are created by the layers of abstraction that separate virtual machines

from resource pools (combined CPU, memory, and storage) that they draw upon," says Kinsey. "Unused virtual machines, if not identified and isolated, can clog up clusters and devour licensing and resources."

Kinsey, who refers to this situation as "server sprawl," goes on to explain that an overprovisioning of virtualized resources can cause service degradation and outages whereas an underutilization can quickly eradicate an organization's initially anticipated ROI.

Kinsey states that V², with its ability to automatically identify underutilized and overconfigured systems, will empower IT departments to more effectively grapple with server sprawl. "V² easily and autonomously tracks all key virtualization metrics, such as cluster, host, resource pool, and virtual machine performance, providing both real-time alerts and dashboards as well as long-term trend reporting," says Kinsey.

"OS, application, and departmental utilization levels are all automatically tracked as a percentage of the total, providing essential decision-support data points for bill-back, resource allocation, and capacity planning," Kinsey says. "Using V², server and storage sprawl can be instantly identified, isolated, and contained. Deeper levels of virtualization are enabled, providing a powerful ROI story. Service levels are elevated to the highest possible levels."

Simplified Installation & Administration

Unlike other tools in the market segment, V² does not require agents or clients as part of its installation process. Rather, Netreo's solution—which uses a modified Linux kernel—easily installs as a virtual appliance by leveraging the pre-existing performance APIs already available within a virtualized operating system.

"V² utilizes a unique pre-integrated and self-updating virtual appliance architecture, eliminating any requirements for the user to load, install, and update OSes, applications, or back-end software such as SQL, as well as eliminating the need to manage patches and updates," says Kinsey.

"One of the design goals of being a virtual appliance is to remove the requirement on the user to load and install operating systems [and] back-end software (like SQL) or to manage software patching and updates," adds James Mancini, Netreo's chief technology officer. "Since the product is a virtual appliance, the technical requirements are (by design) extremely minimal."

V² supports installations within VMware ESX, Infrastructure, ESXi, or vSphere environments. Minimum requirements for typical environments include 2GHz of CPU, 1GB of RAM, and 40GB of storage; larger environments will have slightly increased requirements, according to Mancini.

In addition to being available as a stand-alone product, V² is also designed to seamlessly integrate with Netreo's OmniCenter enterprise management platform. When used in conjunction with OmniCenter, V²'s reporting capabilities are significantly extended. □

NETREO VIRTUALIZATION VISUALIZER

(949) 769-5700
www.netreo.net

Description: Software-based virtualized appliance offers performance management and capacity planning capabilities to administrators of VMware ESX, Infrastructure, ESXi, or vSphere environments.

Interesting Fact: The V² system architecture features a self-updating modified Linux kernel.

SIMENA'S PACKET FLOW SWITCH PFS1524

NEW PRODUCT

by Andrew Leibman

Network Monitoring To The Microsecond

IF YOU NEED YOUR NETWORK to operate in real time, then you need a network monitoring solution that's cut out for the high-bandwidth and low-latency demands of microsecond networking. Simena's latest Packet Flow Switch supports 10GbE bandwidth and guaranteed execution for aggregating, duplicating, distributing, and filtering packets at wire speeds.

The PFS1524 is a 24-port, 1U-form factor network monitoring switch that is capable of the industry's lowest fixed latency for port-to-port packet forwarding: a fraction of a microsecond. This lets users monitor their network and applications down to the individual packet level and measure performance with the utmost accuracy.

The PFS1524 supports all types of SFP+ and SFP modules, which lets customers collect packets from multiple sources and forward them to other devices, regardless of individual wire speed. An intuitive Web-based interface lets users configure multiple switches and generate clusters for a virtual switch with 500 or more ports.

The PFS1524 is also capable of packet slicing, which lets users forward only the configurable portion of packets and, as a result, dramatically reduce the superfluous data that can bog down monitoring systems. Simena's port tagging feature



Simena Packet Flow Switch PFS1524

An ultra-low-latency monitoring switch that supports advanced applications, including tool aggregation and traffic consolidating and dividing.

enables the monitoring system to identify and source each packet by marking packets with the physical port IDs upon receipt. Another useful feature is the PFS1524's ability to support user-generated internal network taps, which lets users directly connect production systems to the switch for packet duplication and aggregation. In effect, users can spare valuable SPAN ports and forego using external taps.

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Wireless LAN Architectures: An Overview

Understanding Options For Managing Radio Frequencies & Data Forwarding

by Kurt Marko

• • •

THE FIRST ENTERPRISE WLANS (wireless LANs) bore a striking resemblance to their consumer counterparts, largely composed of an array of standalone, thick access points haphazardly scattered around a building on a common wired subnet connected to a central switch. Although this simple flat architecture was sufficient for occasional lightweight browsing in common areas, it was utterly incapable of providing the performance, reliability, and scalability of wired networks. Coincident with an explosion in the number of mobile devices was the solidification of wireless standards and significant technology evolution, meaning the design of enterprise WLANs has gotten considerably more complex, requiring a plethora of technology choices and architectural decisions.

WLAN architectural distinctions fall into two categories segmented between the wireless airspace and wired backhaul. The former involves strategies for managing RFs (radio frequencies), while the latter pertains to the network paths for data forwarding and packet routing. Of the two, the hotbed of innovation is the wireless realm, particularly since the wide-scale adoption of 802.11n, with its support for dual frequency bands, additional channels, and MIMO (multiple input/multiple output).

RF WLAN Choices

The industry has converged around two radically different RF management strategies: MCA, the micro channel (or cell) architecture, and SCA, single channel (or virtual cell) architecture. To understand the difference, recall that Wi-Fi networks divide their spectrum into channels, 13 in the 2.4GHz band and 20 on the 5GHz band. With MCA, physically adjacent APs operate on different channels and set power levels to ensure that the signal range doesn't overlap. In contrast, SCA systems operate every AP on a single channel, typically at higher power levels with overlapping coverage.

MCA is overwhelmingly the more popular, with 10 vendors controlling about 95% of the market vs. only two for SCA, according to a count done by Burton Group senior analyst Paul DeBeasi. Yet DeBeasi says this disparity isn't necessarily due to

any inherent technical advantage; rather, vendors were drawn to MCA because it mirrored the cellular phone architecture. Thus, he says the prevalence of MCA is more historical than anything else.

Given the physics of RF propagation, technical arguments between the two camps quickly become arcane; however, MCA proponents contend theirs is the inherently more scalable architecture in the pairing and handoff process and in areas of high client density.

According to SCA advocates, the need for RF planning software hints at MCA's major technical flaw: dealing with so-called co-channel interference between APs operating on different channels. SCA designs eliminate the complexity of channel planning. "If you think about the way you deploy a microcell, you have to answer two questions," says Joe Epstein, senior director of technology at Meru Networks (www.merunetworks.com). "One is how many APs [do you need] and where do you put them, and the other is what channels, power levels, and other settings do you put on each of those access points."

Epstein argues that several features make SCA more stable, deterministic, and simple to install and maintain. First, because every AP is on the same channel, each can operate at higher power levels because co-channel interference isn't a concern. This also improves the SNR (signal-to-noise ratio), which increases data rates and reliability. Next, SCA systems use the wireless AP or controller to manage device association and handoff. "SCA moves most of the client roaming complexity from the client station to the controller by taking the roaming decision away from the end point," says DeBeasi. Finally, because the network uses only one channel, others are available for capacity expansion via layering virtual cells in parallel.

Data Forwarding Decisions

The other architectural choice facing WLAN designers, on the wired side of the network, is much less controversial. DeBeasi sums up the options as centralized data forwarding, in which all wireless traffic is backhauled to the controller, and distributed data forwarding, where routing decisions are made at the AP. Unlike the RF architecture, choice of forwarding

RF Management

The two primary means of managing the radio frequency spectrum in an 802.11n network are SCA (single channel architecture) and MCA (micro channel architecture). The choice affects network design, provisioning, and troubleshooting.

An MCA design uses a repeating cellular pattern of channels that do not overlap each other within the frequency band. MCA attempts to minimize the co-channel interference between 802.11 devices that use the same channel and can expand by more densely packing cells.

SCA uses the single channel for each cell but can be expanded layer by layer with virtual cells, each using a separate radio channel, in the same physical space. Each layer is composed of APs that operate on a single channel, but unlike MCA, rather than having each AP control a single collision domain, the controller and APs cooperatively manage the collision domains across the layer. The controller keeps track of which APs and devices are in range of each other and then coordinates AP behavior appropriately to overcome co-channel interference and collision problems, enabling multiple APs and devices within the layer to transmit concurrently.

Key Points

- The major decision facing WLAN designers is the method of RF channel management best suited to their enterprise: MCA or SCA.
- Each architecture has technical advantages and drawbacks, but both have matured to the point that they can be used to build high-performance, reliable, and scalable enterprise WLANs.
- The other significant WLAN architectural choice concerns data forwarding: centralized or distributed forwarding.

approach isn't an either-or decision, and in fact, DeBeasi advises buyers to find vendors supporting both topologies. "You want the flexibility to support both approaches. For example, you may decide you want guest traffic backhauled to the controller on its own virtual LAN."

Centralized forwarding provides increased control over network traffic

and arguably better security at the cost of increased load on the controller. This is exacerbated, as some traffic may be switched twice, which increases network latency and jitter. With distributed forwarding, the controller load doesn't increase as wireless traffic increases; however, it requires APs with sufficient capacity and QoS features to handle any real-time applications, such as voice and video. Distributed designs are also more difficult to upgrade for higher throughput or future wireless standards.

Reliable WLANs

Despite the RF architectural battles, DeBeasi doesn't see an unambiguous winner and notes that either MCA or SCA can be used to build reliable WLANs supporting even the most demanding real-time applications. "When I talk to customers, [the decision] comes down to their passion for a particular architecture," he says, adding that one solution isn't necessarily better for a particular type of application. "The solutions have evolved over the last few years and they all work." □

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NEW PRODUCT

by Blaine Flamig

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the simulation of bandwidth; latency and jitter (up to 10 seconds); packet loss (random, burst, and periodic or bit error rate); congestion; and other network traits that can hinder application performance. Enterprises can run side-by-side benchmarks to determine how various conditions will impact an application's responsiveness, compare similar products from different vendors, fine-tune application settings, apply impairments to applications to verify a potential solution will work, and run groups of tests concurrently to emulate various conditions.

The appliances are easy to use and require no additional hardware, software, or training. Their emulation abilities also help users construct what-if scenarios to decide what type of networks to use when connecting enterprise offices and predicting how much bandwidth the enterprise should purchase to properly support applications.



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FEATURE PACKAGE

Companies To Watch

We profile several companies worthy of your enterprise's attention.

Streamlined Remote Connectivity & Control | 22

■ ATEN offers KVM products to remotely manage virtual and physical servers and other data center devices so that out-of-band maintenance can be done almost anywhere you happen to be.

Powerful KVM Solutions | 23

■ Founded in 1984 and based in Newburyport, Mass., Adder is recognized as a leader in the design and manufacture of KVM switches, extenders, and KVM over IP products.

Embedded Computing Expertise | 24

■ American Portwell makes single-board computers, communication appliances, embedded computers, specialty computer platforms, rackmount computers, and human-machine interfaces.

Next-Generation Storage Solutions | 25

■ Storage solutions provider Thecus likes to define NAS as "next-generation advanced storage."

Precision Air Conditioning | 26

■ A long-standing, reliable manufacturer of cooling for data centers, Data Aire saw business grow modestly last year at a time when many other companies were suffering double-digit declines.

Streamlined Remote Connectivity & Control

ATEN Offers The Freedom Of Data Center Management Beyond The Enterprise

by Bruce Gain

BAD THINGS CAN HAPPEN IN THE DATA center at the worst moment—in the middle of the night, over the weekend, or just as you're about to start the back nine on the golf course. After receiving an emergency alert, the responsible admin often has to rush to the office, regardless of where he is at whatever hour it may be. To relieve some of the pressure placed on admins, ATEN offers KVM products to remotely manage virtual and physical servers and other data center devices so that out-of-band maintenance can be done almost anywhere you happen to be. Through a single interface, the admin has access whether at home, at work close to the data center, or even at the golf course through a simple Internet connection from a PC.

and go into the BIOS, then you can do that [with our products]."

Security Considerations

The idea of offering access to the data center from outside of the enterprise and beyond the firewall might raise security concerns among many admins. After all, what would happen if the wrong person were able to log in and control (and thus disable) servers from outside the enterprise? ATEN seeks to address security concerns in a few ways. For example, it offers remote secure authentication methods such as Common Access Card integration and Kerberos support for its enterprise management product lines.

"Similar to VPN connections that create a secure tunnel from end point to end point, the KVM interface is an end point that you log into, which passes along the information to the corporate end point," Johnson says.

Ideally, only in-house and IT managers and staffers would be able to access and control servers and other data center equipment remotely. However, IT departments must often rely on outside help, such as consultants, to complete specific tasks or resolve data center issues inside the enterprise. Giving them access to ATEN's KVM interfaces may often be necessary so they can perform certain tasks remotely, but what happens to their access once the project is completed? And in case of security problems, how do you keep track of which consultant did what during a specific time period? To help better control third-party access to the data center remotely, ATEN tools have auditing capabilities to manage and track third-party connections. "We are keeping an audit trail of who's doing what, when, and for how long," Chianchiano says. "With a lot of consultants being in a corporate IT environment, they only have their credentials for a specific period of time [with our products]. Afterwards, you can go back and do an audit trail to see exactly what happened."

Virtualization Factors

Virtualization capabilities will continue to significantly affect how servers and other equipment are allocated and managed. Although most data centers at small to medium-sized enterprises have yet to virtualize most of their servers, the penetration rate is expected to continue

to increase at a rapid pace in the future. To meet the management challenges that virtualization can pose, virtualization capabilities are integrated in ATEN's products' capabilities.

"With the big push for [virtualization software] and virtual machines where all of the hardware resources are consolidated into a single box, we provide a simple and secure way to access everything," Johnson says. "If an IT admin takes his computer to a coffee shop and logs into an IP address, as soon as he logs in, he has access to everything he should have

in the United States or in Europe, but if I am responsible for a hundred devices, both logical and physical, then I can arrange these devices in a way that makes sense to me, so that when I log in, I see exactly what I am supposed to be looking at."

Power Control

With virtualization comes increased power loads on machines when two or more physical servers are consolidated into a single machine. Additionally, increasing power and cooling needs means admins must monitor and control rack power more closely at the server level. To meet these needs, ATEN plans to introduce products that will allow for direct power receptacle control "from anywhere in the world," Johnson says.

"Imagine a rack of servers with outlets, and as we virtualize machines, they are going to use more and more of their power [limits] per device because the utilization

Ideally, only in-house and IT managers and staffers would be able to access and control servers and other data center equipment remotely. However, IT departments must often rely on outside help, such as consultants, to complete specific tasks or resolve data center issues inside the enterprise.

access to from a KVM side and virtual server side, as well."

Where the servers are physically located should also be irrelevant when using ATEN's KVM tools once they are virtualized, Chianchiano says. "We are bringing all of the tools into one login, so that when you log on, there is no question about where that server is and where the device happens to be while it just presents itself to me in a logical way like a menu," he says. "There might be servers

goes up." Chianchiano says. "So metering at the outlet level will show us how much power we are using at the outlet device on a real-time level."

By boosting the power consumption of specific servers on a rack when servers are consolidated with virtualization, the power monitoring and control products will help prevent power overloads from occurring. "You will not then violate your power thresholds on a server [or rack] level," Chianchiano says. □



Company Information



ATEN

Location: Foothill Ranch, Calif.

URL: www.aten-usa.com

Date Company Founded: 1979

Interesting Fact: ATEN was founded in Taiwan before establishing a presence in the United States in 1996.

"We are trying to provide simple, safe, and secure access to physical or virtual pieces of hardware," says Aaron Johnson, a field application engineer for ATEN (www.aten-usa.com). "We [seek] to integrate the KVM infrastructure and the data center infrastructure and have them work together."

In addition to remote management capabilities, ATEN's KVM products offer out-of-band connections so that servers and other components can be managed even if they are offline. This way, admins are not dependent on software-based server management solutions in the event of software errors or network failures, Johnson says.

"When your server's OS is bad or when you are doing a barebones installation, that is when the out-of-band connection becomes part of the equation," says Peter Chianchiano, sales account manager for ATEN. "When you need to reboot servers

FEATURE PACKAGE

Powerful KVM Solutions

Adder Leverages IP Connections To Provide Data Center Admins With Greater Remote Control

by Sixto Ortiz Jr.

• • •

KVM SWITCHES GIVE ADMINISTRATORS the ability to control multiple computers using a single keyboard, mouse, and monitor. Extenders and KVM over IP devices enable the same control over distances ranging from a few hundred feet to a continent away. The ability to control multiple machines over a single set of input devices is valuable in those settings—such as data centers—where it is impractical to provide a keyboard, mouse, and monitor for every single machine personnel must attend to.

Founded in 1984 and based in Newburyport, Mass., Adder (www.adder.us) is recognized as a leader in the design and manufacture of KVM switches, extenders, and KVM over IP products. Adder's products may be of particular interest to data center administrators who want to leverage the use of KVM technology in their shops.

A Positive Impact

Data center administrators at small and medium-sized enterprises are always looking for products that will positively impact their operations in an efficient and cost-effective manner. The combination of Adder's high-performance KVM over IP products and the advanced functionality of VNC (Virtual Network Computing) provide significant advantages for administrators looking to find a strategy for virtualization as well as out-of-band KVM over IP management, according to Adder.

Company Information



Adder

Location: Newburyport, Mass., with branch offices overseas in the UK, the Netherlands, Germany, and Singapore.

URL: www.adder.us

Date Company Founded: 1984

Interesting Fact: The original Adder logo was designed by a sculptor at the Cornell University of Fine Art, who later went on to sculpt the images on several British coins, including the 50-pence piece.

Administrators can also integrate power control using Adder's technology via an RS-232 port retaining control within the user window. In addition, monitoring can be enabled via standard third-party power software.

Adder's open architecture policy, in tandem with its KVM Admin API, provides administrators with the ability to build and adapt a solution to their own specific requirements. This enables maximum flexibility by freeing administrators from having to operate within the constraints of a one-solution-fits-all type of product, the company says.

Products For Data Centers Today

Adder manufactures and markets a wide array of products aimed at various market segments, including banking, medical, government, broadcast, and general

enterprise products. Adder products run the gamut from simple single-user (desktop) KVM switches to multiuser (rack-mount) KVM switches and KVM over IP switches. In addition, the company designs and manufactures a variety of ancillary products, such as KVM management software, extenders, cables, rackmount kits, and other accessories.

Because the company has a dedicated research and design center, Adder products are already used by data center managers all over the world, the company says. For example, Adder works closely with RealVNC to ensure that Adder products deliver consistently reliable results while also making the best use of VNC technology.

Also, the company's ability to innovate means it can deliver high functionality in an accessible, budget-friendly format. One example is Adder's 16-port AdderView CATxIP 5000 (AVX5016IP) digital KVM switch, which was developed in tandem with chip designer Adventiq and is designed to provide four independent non-blocking remote access sessions over standard network infrastructure.

The AdderView CATxIP 5000 ships with the ADDER.net network management software suite, which provides for the management of IP control devices and virtual servers via a single user interface. Via this combination of hardware and software, the AdderView CATxIP 5000 provides administrators with an enterprise-class data center management tool that is still within their IT spend levels.

Looking toward the future, Adder has a number of new projects that may pique the interest of data center administrators looking at KVM technology. For example, the company's AID (Adder Integrated Device) program will, over the coming months, lead the integration of Adder KVM switches into other data center and IT management devices. Adder says this is exciting because customers will reap the benefits of multiple leading technology developers working together to deliver a single best-in-class product.

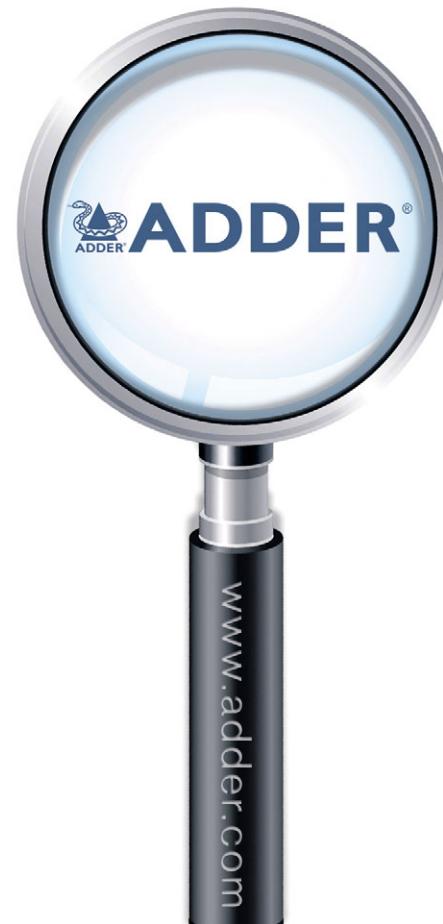
Reflections On The Industry

There are a number of trends that Adder thinks are interesting developments within the IT industry.

For example, says Adder Sales Director Simon Clew, "We are seeing a convergence

and flexibility demanded by the IT industry. This type of convergence is ideal in situations such as a public exhibition where information is presented to an audience that then has the capability to interrogate data held across the enterprise.

In addition, says Clew, data center and enterprise customers have unique drivers: They are seeking to manage and lower power consumption while still demanding high-quality, high-definition screen content together with the ability to use a multitude of nontraditional USB devices. This leads



to the need for management hardware, such as Adder's AdderView CATxIP 5000, which allows five users (four over IP) to directly manage 16 servers. Using this type of hardware reduces the need to physically enter the data center and removes the need to deploy multiple single-user consoles around the facility.

KVM technology is quite useful for data center administrators who may need to control multiple computers using a single keyboard-video-mouse setup. Because KVM technology can extend the

The company's ability to innovate means it can deliver high functionality in an accessible, budget-friendly format.

between traditional A/V and traditional IT infrastructure demanding new and unique solutions." One example of a solution driven by this convergence is the AdderLink Infinity, which not only delivers the audio/video capabilities demanded by the A/V industry but also delivers the control

span of control without concern for distance limitations (using KVM over IP), the technology makes a lot of sense in the data center environment. Adder's wide range of KVM products provides data center administrators with plenty of choices for their KVM needs. ■

Gartner Offers Bright PC Outlook

Industry research firm Gartner predicts that global PC shipments will bounce back this year to the tune of 376.6 million units, which is up 22% compared to the 308.3 million units that shipped last year. PC spending is also expected to rise by 12% to \$245.4 billion by the end of this year. Gartner sees a bright future for the netbook market in the near term but says it will see declining growth due to falling mobile PC prices and new interest in tablet devices following 2010. Gartner reports

that global netbook shipments will total 41.8 million units and make up 18.6% of mobile PC shipments in 2010, but by 2014, netbooks will make up just 13.9% of the mobile PC market.

Survey Studies Broadband Speeds & User Satisfaction

The FCC released the details of a survey of broadband users, which found that most are clueless about their bandwidth speeds. Market research firms Abt/SRBI and Princeton Survey Research Associates, International, determined that 80% of broadband users don't know the speeds at which they upload and download data; however, 91% said they were satisfied with the performance they experience. The broadband connection speed service Ookla recently published a report showing that the United States ranks 26th in average downstream speeds. To get an accurate picture of end-user bandwidth, the FCC is seeking 10,000 broadband users to volunteer to receive network speed monitoring equipment by registering at www.testmyisp.com. According to the FCC, ISPs claim to have increased download speeds by 20% every year for the past decade.

Chinese Supercomputer Ranks Second In Top 500

The Dawning Nebulae, a supercomputer based at the National Supercomputing Center in Shenzhen, China, has been ranked second on the semiannual Top 500 list of the fastest supercomputers in the world. The Nebulae, which uses Intel and Nvidia chips, reached a sustained computing speed of 1.27 petaflops, or about 1,000 trillion calculations per second. The Cray Jaguar, based at the U.S. Department of Energy's Oak Ridge National Laboratory, remained in first place with a processing speed of 1.75 petaflops. China now has 24 supercomputers on the list, tying for fourth place with Germany behind the United States, the UK, and France. The rankings were released at the International Supercomputer Conference in Hamburg, Germany.

Top Concerns For Tech Companies

BDO, a professional services firm, has identified the top risk concerns at the 100 largest public technology companies in the United States. BDO compiled the research by examining risk factors listed in the fiscal year 2009 10-K SEC filings of the tech companies. The No. 1 risk was a tie between strong competition and failure to develop or market new products and services—94% of companies cited both. U.S. economic conditions followed as a close third, with 93% of companies citing this as a concern. Changes to government regulations (88%), internal operations concerns (83%), inability to attract or retain personnel (83%), and intellectual property infringement (74%) are also included in the top 10 risks.

Study Shows Verizon Leads In Customer Satisfaction

A recent report shows that Verizon customers are the most satisfied among several wireless carriers. The report, "Wireless Service Provider Trends" released by ChangeWave Research, is based on a survey of 4,040 wireless subscribers who were asked to answer questions about their level of satisfaction with their carrier, the number of dropped calls they experience, and future wireless plans.

When it comes to customer satisfaction, Verizon leads with 49% of customers saying they are very satisfied with Verizon's cellular service. Sprint/Nextel is in second place with 35%, while T-Mobile and AT&T tie for last place at 23%. But satisfaction isn't the only category where Verizon emerged as the leader. Verizon customers also say they experienced fewer dropped calls than other carriers, with only 1.5% of calls being lost over the past three months. Sprint/Nextel customers reported dropped calls 2.4% of the time, while AT&T had a record high rate of 4.5%.

Verizon is also seeing an increase in the number of potential new customers it receives. Of the survey's respondents, 27% say they will switch to Verizon in the future. ChangeWave believes this is likely because of the availability and demand for new Droid smartphones. About 18% of respondents say they will switch to AT&T, while fewer voice plans to switch to Sprint/Nextel (7%) or T-Mobile (5%).

The iPhone Factor

ChangeWave's survey also asked participants about their interest in Apple's iPhone, which is currently only available on AT&T's network because of an exclusive agreement with Apple. "One of the most important findings was the strength of demand for the Apple iPhone if it became available on other major providers," says Andy Golub, ChangeWave associate director of research and co-author of the report.

Out of the respondents currently using Verizon, Sprint/Nextel, or T-Mobile services, 49% say they would be very likely or somewhat likely to purchase an iPhone if it became available on their network. Among Verizon customers alone, 53% say they would purchase an iPhone.

"Interest in the iPhone among Verizon subscribers is off the charts," says Golub. If rumors prove true and Verizon does indeed offer the iPhone in the future, Golub says that it would level the playing field between Verizon and AT&T, the top two industry leaders.

by Kris Glaser Brambila



FEATURE PACKAGE

Embedded Computing Expertise

American Portwell Develops Computing Platforms That Meet A Variety Of Needs

by Holly Dolezalek

• • •

MORE COMPUTING POWER, less power usage: That's what the market wants from its computers today, and American Portwell's embedded computing solutions fit the bill, or so the company hopes.

American Portwell (www.portwell.com) is a wholly owned subsidiary of Portwell, which was founded in Taiwan in 1993. Portwell began developing single-board computers for the industrial PC market in 1995 and opened its U.S. subsidiary

well as other touchscreen panels for self-checkout in grocery stores and information kiosks at airports.

A Variety Of Verticals

Lee says that American Portwell does well in industries that need both embedded computing solutions and growth potential. That includes several vertical markets: network security; medical; industrial automation; infotainment; and the military, aerospace, and government sectors.

American Portwell has invested time and resources in getting more share of the medical market. The company earned ISO 9001 and ISO 13485 certifications in 2008 so that its products would appeal to the Tier 1 and Tier 2 medical device manufacturers it had targeted. "Medical OEM requires more in quality management system and long lifecycle support," Lee explains. "We are committed to providing seven to 10 years of product lifecycle support."

American Portwell also has made the investments to appeal to the military and government sectors. The company's facility is a GSA (General Services Administration)-certified contract site.

In the small to medium-sized enterprise

market, American Portwell's claim to fame is primarily its network security appliances. Lee explains that the company's strength is in the diversity of its product portfolio in this area. "The applications include enterprise, small and medium office, and SOHO," he says. "We have very comprehensive products for each application category."

The Effects Of The Economy

Lee says that one of the biggest challenges American Portwell faces—much like the data center industry as a whole—is a long lead time for parts. The worldwide recession that began in 2008 forced many suppliers to cut back their production, and although there are signs of recovery, component makers haven't been able to ramp up their production

fast enough to meet companies' needs. A labor shortage has also compounded the problem.

The Wall Street Journal reported in June that telecommunications companies such as AT&T and Ericsson were scrambling to find electronics components to meet demand, as were motherboard manufacturers. Some companies were saying that their revenue for the first quarter had been affected by the inability to get enough components to meet customer demand. And many manufacturers are finding that they have to pay extra or wait longer to get those components.

"The serious component shortage in the industry has doubled or even tripled the lead time [we had] before [the recession]," Lee says.

RISCy Business

Lee also believes that a long-running battle between RISC and x86 will also be an important factor in development both for the industry as a whole and for American Portwell. RISC (reduced instruction set computer) designs have been around since the 1980s, but Intel's

Company Information



American Portwell

Location: Fremont, Calif.

URL: www.portwell.com

Date Company Founded: 1999

Interesting Fact: American Portwell's parent company, Portwell, has worldwide offices in the United States, Taiwan, Japan, China, the United Kingdom, and India.

x86 design has dominated the PC market for a long time, although the company has released products with RISC processors, as well. Its Xeon 7500 chips, released in March, were aimed at capturing more of the market that has been dominated by RISC systems.

Now, RISC may be experiencing a different type of resurgence with the introduction of more smartphone components in computing platforms, such as the iPad, which runs on the iPhone platform instead of the MacBook platform.

American Portwell has a long-standing and symbiotic relationship with Intel and is an associate member of the Intel Embedded Alliance. "Our product portfolio is very well aligned with Intel's embedded product roadmap and covers focused vertical markets such as network security, medical, industrial automation, infotainment, and gaming," Lee says.

So naturally, Lee hopes that Intel will win this battle again. "The more architecture conversion from RISC to Intel's, the more opportunities for Portwell, since the majority of Portwell's products are Intel-based," he explains.

American Portwell's goals are simple: In the long term, of course, the company plans to continue developing and marketing embedded computing solutions. In the short term, it's after two things: market share and vertical market position. The company will focus on increasing its market share in the Americas, particularly Central and South America. It will also focus on reaching the top three in three vertical markets. "We will enrich and improve both products and services," Lee says. □

in 1999. Headquartered in Fremont, Calif., American Portwell is one of several offices for Portwell, which also has offices in Japan, China, the United Kingdom, and India.

American Portwell's employees are almost all located at the Fremont headquarters, although the company has an office in Georgia, as well. Its facility is 42,000 square feet. The privately held company had revenues of about \$30 million in 2009.

The company makes single-board computers, embedded computers, specialty computer platforms, rackmount computers, communication appliances, and human-machine interfaces. It also makes industrial PC products, including backplanes, chassis, and power supplies. "The standard product categories include network communication appliance systems, PICMG 1.X single-board computers (SBC) and backplanes, SBC-based systems, small form factor embedded boards and systems, Q7 and COM-E modular computing, and all-in-one panel PCs," explains Allen Lee, the company's CEO.

Its human-machine interfaces include panel PCs and medical touch panels as

FEATURE PACKAGE

Next-Generation Storage Solutions

Thecus Has What It Takes To Keep Your NAS Systems Up-To-Speed

by Robyn Weisman

STORAGE SOLUTIONS PROVIDER THECUS likes to define NAS as “next-generation advanced storage.” The Taiwan-based company (with U.S. offices in Milpitas, Calif.) offers more than 30 different NAS solutions that range from low-priced home and consumer solutions to enterprise-class designs that offer VMware, eSATA, and iSCSI compatibility as standard features and can handle 10GbE connections, among many other features.

Thecus (www.thecus.com) was founded in 2004. Through its global sales channels, the company distributes its products in more than 30 countries and territories worldwide.

According to Thecus’ General Manager Florence Shih, Thecus strives to be a pioneer in data storage integration no matter the environment. “Our design philosophy focuses on not only how NAS can improve the working productivity process but also how globally networked systems can meet changes in an organization’s environment,” Shih says.

Shih points out that the ability to provide critical information efficiently and safely to the right people while keeping costs low is key to an organization’s survival, let alone prosperity. “Businesses need a storage solution that is not only cost-effective and flexible but also has the expandability to be easily upgraded and adapted to new technologies without the need to spend a fortune when replacing an existing storage infrastructure,” she says.

Company Information



Thecus

Location: Milpitas, Calif., and Taipei, Taiwan

URL: www.thecus.com

Date Company Founded: 2004

Interesting Fact: The name Thecus is derived from the Latin word *theca*, which means, “case, envelope, or covering,” according to Cassell’s Latin-English Dictionary.

Good Choice For Virtualization

John Webster, senior partner at IT analyst firm Evaluator Group, says that NAS solutions fit well in data center environments that are using virtualization because of the way NAS can access data and the ways in which that access may be managed. “VMware likes you to have network storage in order for you to take advantage of some of the more advanced migration, disaster recovery, and load-balancing functions. NAS turns out to be an easier way to do things because you don’t have to install a new Fibre Channel SAN network. You

can get by doing it with Ethernet,” Webster points out.

Thecus understands the importance of VMware integration. As of December 2009, its entire enterprise line, which includes the N7700PRO/N8800PRO, N7700SAS/N8800SAS, and N7700+/N8800+, along with its SME- and SOHO-oriented N4200 NAS are all VMware Ready certified. According to Shih, the remainder of Thecus’ product line will be VMware Ready certified in the near future.

“With VMware certification, users can finally use a single NAS on a network that connects computers of different operating systems with flawless compatibility,” Shih says.

NAS Redefined

Thecus describes its NAS solutions as “NAS redefined,” says Shih. “We believe in constant innovation, a commitment to harnessing new technologies to create products that not only serve but delight the end user with their extended functionalities, increased performance, and outstanding value,” she says.

As an example of the company’s innovation, she notes that its N7700PRO enterprise NAS solution offers 10GbE and speeds of more than 300MBps. For his part, Evaluator analyst Webster says that the reliance on Ethernet as a storage fabric as opposed to Fibre Channel is a major factor in driving current network-attached storage adoption.

Webster points out that the three most important things to look for when considering a NAS solution are the ability to create replicas of data, simplicity in provisioning storage to VMs (virtual machines), and performance. “The I/O pattern in a virtualized server environment tends to be random, so performance helps with a storage environment,” he says.

Thecus understands the importance of the criteria Webster puts forth. All Thecus NAS solutions support rsync, which allows remote replication of data stored in the NAS, along with snapshot functionality.

Moreover, most Thecus solutions offer easy RAID expansion and migration that protects users from data loss due to hard drive failure, says Shih. “Users can add or replace hard disk drives without losing data or having to shut down the unit, and features such as [the ability to stack] multiple units and internal PCI-E slots for adding and incorporating future technologies [provide expandability and ongoing value],” she says.

To make data storage integration easy, Thecus NAS solutions can link to any storage device using iSCSI, USB, and LAN connections. In addition, Thecus solutions allow users to build RAID configurations to prevent data loss due to hard drive failure, rsync to enable remote replication of data stored in a NAS, and snapshot functionality.



SME Products For All Scenarios

Thecus offers many solutions for an SME’s needs, whether the organization is looking for a NAS solution within the main data center or wants something to complement smaller remote offices. The enterprise-level N7700 and N8800 series of NAS solutions offer a broad range of advanced technologies, superior performance, and excellent expansion capabilities.

For example, both the N7700PRO and N8800PRO feature Intel Core 2 Duo processors, 4GB of DDR2 memory, and a built-in PCI-E expansion slot that is compatible with high-speed 10Gb Ethernet adapters. Both series of storage servers are iSCSI-ready; offer support for multiple file systems, such as Ext3, XFS, and ZFS; and provide online RAID migration and expansion. The PRO versions of the two series also can automatically rebuild a RAID array to increase storage capacity.

The N4200 NAS storage server offers a lot of functionality for those looking for a smaller NAS solution. This four-bay device is powered by the new Intel Atom D510 dual-core processor running at 1.66GHz and comes with 1GB of DDR2 memory, delivering quick system response and handling multiple-client access, Shih says.

Also, the N4200 comes with both an LCD that shows critical system information and a 2.8-inch OLED display that enables users to change a number of settings right from the device, including WAN, LAN, Link Aggregation, and language. And its special Mini-UPS comes with a removable 1,000mA/h lithium-ion battery so that in the event of power failure, the battery will kick in automatically and supply the system with enough power to save all unwritten data from the file cache to the hard drives while completing all other running tasks, such as firmware upgrades, before powering off, ensuring overall data and system integrity, Shih says. ■

WD Outships Seagate

For the first time, Western Digital’s quarterly shipments of hard drives have surpassed those of market leader Seagate. According to figures tallied by research firm iSuppli, WD shipped 51.1 million drives in the first quarter of 2010, representing a 3.2% step up from the previous three-month period. Seagate’s shipments grew more modestly (0.8%) to 50.3 million in the first quarter. However, Seagate continued to dominate financially, pulling in first-quarter revenue of \$3.1 billion in contrast to WD’s haul of \$2.64 billion. In market share, the two are joined in the top five by Hitachi GST, Toshiba, and Samsung.

GlobalFoundries To Expand

Semiconductor maker GlobalFoundries has announced plans to add manufacturing capacity. Following in the footsteps of companies such as Samsung and Hynix Semiconductor, both of which recently announced expansion plans, GlobalFoundries will expand its 300mm (45nm, 40nm, and 28nm process nodes) wafer production abilities in Dresden, Germany, to 80,000 wafers per month. The company is also scaling up its clean room under construction in Saratoga County, N.Y., to support the manufacture of up to 60,000 300mm (28nm, 22nm, and 20nm) wafers per month.



Google Officially Acquires AdMob

Google has wrapped up its acquisition of mobile advertising platform developer AdMob, having secured permission from the Federal Trade Commission. The FTC had previously expressed some antitrust concerns, but because Apple acquired Quattro Wireless (another mobile advertising platform developer) after Google announced its purchase of AdMob, the FTC decided the market would be competitive. Google entered a purchase agreement with AdMob in 2009 for \$750 million. In a blog post, Google said it will begin integrating workers and products with AdMob as soon as possible and that mobile advertising is now an integral part of its business.

Scareware Scammers Indicted

An illegal “scareware” business has earned three men federal grand jury indictments. In order to get individuals to purchase their anti-malware products, they allegedly tricked people into installing malicious software by leading them to believe their computers had been infected. The products raised \$100 million for the three men after reportedly duping individuals in 60 countries. According to the indictment, the three men (Bjorn Daniel Sundin, Shaileshkumar P. Jain, and James Reno) conned people into purchasing products by implementing deceptive screens and checkboxes on Web sites. The men sold products such as WinFixer, Antivirus 2008, Malware Alarm, and VirusRemover 2008 from their company, Innovative Marketing.



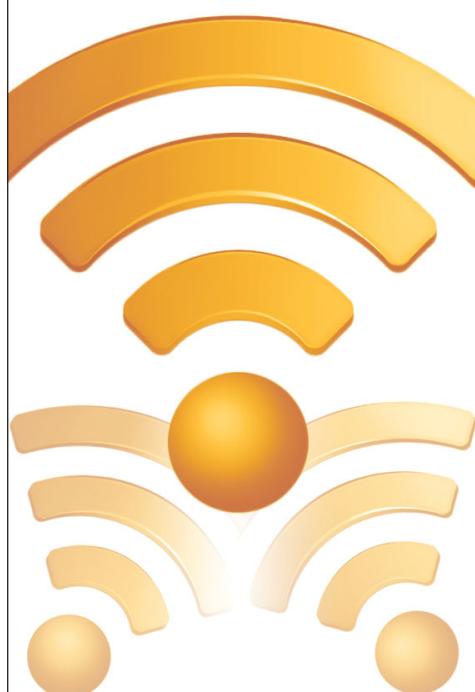
Groups Collaborate On 60GHz Wireless

Technology marches on. Interested parties agree that everything must be made to run faster, so there's a need to constantly work on schemes to accelerate existing technologies.

The problem, of course, is that agreement often stops there. Multiple schemes come to the fore with no clear winner. Each has its backers, and each its pros and cons. The result, a format war, hurts the market in a number of ways. Manufacturers become hesitant to commit to one technology over another that may turn out to be the market leader. Thus, few new devices hit the market, holding back progress.

Moreover, when vendors do field products that later "lose" the format competition, their customers are left with orphaned goods. No one appreciates abandonware.

Hence the good news from the Wi-Fi Alliance, which was formed to drive adoption of a single worldwide standard for high-speed



wireless networking, and the Wireless Gigabit Alliance, which works toward improving wireless connections between computing, communications, and electronics devices. The two groups are now working together on Wi-Fi's next step. Both groups count industry-leading companies such as Microsoft, Cisco, and Intel among their members.

Advance Development

"The goal of the collaboration between Wi-Fi Alliance and WiGig Alliance is to advance the development of a next-generation Wi-Fi Alliance certification program supporting Wi-Fi operation in the 60GHz frequency band and to encourage the development of products supporting 60GHz technology to expand existing Wi-Fi capabilities," says Dr. Ali Sadri, chairman and president of the WiGig Alliance and an Intel director.

"We are expecting a new class of tri-band devices, which operate in the 2.4, 5, and 60GHz bands, to deliver data transfer rates up to 7Gbps—more than 10 times faster than the highest 802.11n rate—while maintaining compatibility with existing Wi-Fi devices," Sadri says. "WiGig technology was designed to support applications on both low-power and high-performance devices, enabling WiGig to create a global ecosystem of entertainment, computing, and communications devices."

by Marty Sems

FEATURE PACKAGE

Precision Air Conditioning

Data Aire's Cooling Products Help Keep Your Data Center Cool As A Cucumber

by Phil Britt

ORANGE, CALIF.,-BASED COMPANY Data Aire started providing cooling solutions for data centers back at a time when relatively low-power computers were nearly the size of a room and the thought of individuals owning them was all but ludicrous. But even those low-power computers needed solutions other than the typical residential and commercial air conditioners available at the time.

A long-standing, reliable manufacturer of cooling for data centers, Data Aire (www.dataaire.com) saw business grow modestly last year at a time when many other companies were suffering double-digit declines, which company officials attribute to continued steady growth of data centers, particularly in its target markets of financial services, health care, and government, all of which need sufficient cooling in order to remain viable.

State Of The Industry

Cooling for a data center needs to go beyond simple temperature control and has to include maintaining proper humidity and keeping airborne particulates to a minimum, says Jeff Trower, Data Aire's general sales manager. Cold air is naturally drier than warmer air. If the data center doesn't maintain proper humidity, the resulting static electricity can be as dangerous to the data systems as the threat of warmer air. Too much dust or other airborne particulates can similarly wreak havoc with data center systems.

So Data Aire focuses on the concept of "precision air," which the company describes as a total environmental protection system for the precise control of temperature, humidity, and particulates.

Company Information

Data Aire



Location: Orange, Calif.

URL: www.dataaire.com

Date Company Founded: 1965

Interesting Fact: Data Aire is one of the first manufacturers of computer room air conditioning solutions.



efficiency. Now they are coming to us. Data center managers have two problems: how to get enough power to the racks and how to cool those racks," he says.

"It used to be that you could cool a 1.5-kilowatt server by accident," Trower adds. "But now that racks are nearing 20 kilowatts, you really need to be good. You really need to know what you are doing."

Tapping Into Energy Efficiency

Data Aire hopes to tap into this energy efficiency wave with its gForce line of air conditioning units, which the company says provides energy efficiency of 20 to 40% over some other models.

The gForce units have larger internal cabinets than similar cooling equipment, meaning less restrictive airflow and more efficient operation. The gForce units feature coils that use "rifled" tubing. Similar to the borings in a rifle that spin a bullet while firing, the tubing spins the refrigerant, forcing the liquid to the outside of the coil, producing better cooling transfer and, therefore, improved energy efficiency.

Electronically commutated motors, which use variable speeds, are more efficient than the traditional motors that run at a constant speed. The integrated plug fan is designed to enhance energy efficiency by 3 to 5%.

The company also recently launched its Unity Cooling, a scalable system designed for racks of 5 to 30kW. Data centers can add the Unity systems to rows of racks, extending the units as needed. Multiple rack heights and sizes affect only the unit's position and duct length. The systems automatically scale to the IT load types. Data Aire can configure the Unity systems to provide a blanket of cool air along the side of network switches. The Unity cooling system handles the heat exhaust.

Both the Unity Cooling and the gForce systems are designed to provide more efficient solutions for today's data center cooling needs, Trower says.

Too many data centers waste too much energy on cooling, according to Trower. So the problem is more with the

efficiency of cooling than with the capacity of cooling.

Focus On Customer Service

Many other data center air conditioning systems are similar from manufacturer to manufacturer, says John Martin, Data Aire's marketing manager. The difference comes down to customer service, an area where Data Aire feels that it excels.

"Most companies will make several units at a time without a lot of variation. They'll focus on big jobs; if someone only needs one or two units, they're not very customer-friendly," says Martin. "We will work with customers on special needs and special requests."

Among the ways Data Aire attempts to provide superior customer service is through faster delivery times, Martin adds. Although most cooling providers will require lead times of about eight weeks, Data Aire typically requires only half of that. In special situations, Data Aire will attempt to cut time to delivery even more, making some installations in as little as a week, according to Martin. "A lot of things come up. People have a failure, or they forget to order a unit."

Most companies provide cooling units with one-piece frames; however, Data Aire can provide units with split frames, meaning they can be split for moving and installation. This makes it much easier to place units in older data centers, many of which have very constricted space, according to Martin.

Sometimes the requests are more unique, such as a customer who wants unit drain pans at a particular angle to fit in with existing drainage systems or a customer who wants a unit with slightly different external sizing so floor tiles won't need to be cut for installation. Data Aire is willing to work on more complex requests, as well.

Customer education has also become an important element in the company's customer service mix, according to Trower. "Education is a key to helping our customers." □

Most data centers are kept too cold, according to Trower, who points to data centers kept at 65 degrees Fahrenheit, meaning systems are taking humidity out of the air to keep it cool and then adding it back in to prevent static electricity. Most data centers can operate efficiently at 80 F, says Trower, pointing to new guidelines from ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers).

Efficient cooling is a much hotter topic now than it was a few years ago, as data center managers today are aggressively seeking out ways they can make their cooling systems more efficient, Trower says. "Four years ago, we couldn't engage a data center manager in a discussion on energy

CASE STUDY

Monitoring & Management For All Networks

Ipswitch's WhatsUp Gold Lets Oilfield Company Be More Proactive In Addressing Network Issues

by Kris Glaser Brambila

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STALLION OILFIELD SERVICES' slogan "Everything but the Rig" is no misnomer. The company provides nearly every material needed in the oilfield industry, including services and rentals for oil and gas operations all over the United States. After Stallion builds a location and creates roads to reach that location, it can even transport the rig onsite. Once a rig is in place, Stallion can provide forklifts and other surface equipment, water, sewage, light, and communications through its privately owned and operated VSAT (very small aperture terminal) network. "Anything that the rig site does not include, we can provide," says Pedro Buhigas, director of technology at Stallion Oilfield Services.

According to Buhigas, Stallion Oilfield Services wasn't in need of a network monitoring solution in the beginning. Stallion Oilfield started out small, with only a few dozen employees, but it grew at an astonishing rate. "When we first started, there were only 40 employees and two field officers, and then we experienced this humongous growth spell in which we were adding an office a month," says Buhigas. But as Stallion Oilfield matured, so did its IT needs. "That's when we really started feeling the pain, because we couldn't keep up with our growth manually, so to speak," he says.

Stallion Oilfield began using Ipswitch's WhatsUp Gold in 2007 (whatsupgold.com). WhatsUp Gold is a network monitoring and management solution that comes in three editions: Premium, which is designed for enterprise and government businesses; Standard, designed for small and midsized businesses; and Distributed, made especially for distributed networks.

WhatsUp Gold gives businesses the visibility needed to fully monitor and control their networks, with reliable single-site and distributed network management all day, every day. The program uses a

wizard-based tool that can automatically discover Layer 3 devices with various discovery options, including SNMP Smart-Scan, IP address range scan, single device scan, or host file import. And users can easily configure their network by dragging and dropping icons on a hierarchical map that represents the network. WhatsUp Gold users can even create and configure one of more than 200 out-of-the-box reports to monitor the network's health and performance.

The Best Monitoring Solution

WhatsUp Gold seemed to have every aspect that Stallion Oilfield Services required for its ever-growing business. "We have offices across the United States, so we have networking equipment pretty geographically dispersed," says Buhigas, who says that with the help of its VSAT network, Stallion Oilfield monitors devices all the way to the rig site. "It was a challenge to try to be proactive about what was happening," he says.

Buhigas explains that the initial challenge that Stallion Oilfield faced as it continued to grow was that its employees were becoming more and more reactive, rather than proactive, to user concerns. When a customer called in to report that he couldn't access the Internet, only then could Stallion Oilfield begin to diagnose and

correct the problem. "It was a huge challenge to keep track of it all," says Buhigas.

But with the introduction of WhatsUp Gold, Stallion Oilfield could stop problems before they started, and more quickly resolve issues that did arise. "[WhatsUp Gold] has allowed us to be very proactive to what's happening in our network," he

Installation & Ease Of Use

Since Stallion Oilfield has been using WhatsUp Gold, it has upgraded four times. During the installation, Buhigas says Stallion Oilfield didn't experience any major issues. "It was as straightforward as it could have been," he says, "given the



says. And that's a good thing, as Buhigas describes how Stallion Oilfield monitors at all levels via SNMP traps, Windows events, and others.

Buhigas says that out of the many other network monitoring solutions available, the Ipswitch WhatsUp Gold toolset was the best choice for Stallion Oilfield because of its price, which he says is "very attractive" compared to other offerings.

After some research, Buhigas says he and his colleagues discovered that WhatsUp Gold is widely used; Ipswitch's Web site states that WhatsUp Gold has been tested and proven on more than 100,000 networks. Ipswitch also offers a free 30-day evaluation of WhatsUp Gold, which Buhigas took advantage of. "I played around with the demo, and it was very easy and extendible," he says.

In terms of extensibility, Buhigas says that if WhatsUp Gold doesn't have a specific monitoring capability out of the box, it's simple for him to create an active script or VBScript, apply it to the software, and then have the monitoring potential he needs. "That extensibility allowed us to have one tool being used for essentially 100% of our network and applications, instead of having to have separate tools for separate aspects of what we're trying to monitor," he says.

complexity of our network and everything else that we had to deal with." Minor installation concerns included figuring out the correct permissions for the WhatsUp service, Buhigas states, and making sure the software was set up to monitor everything Stallion Oilfield wanted it to.

After a conclusive usage period, Buhigas says that Stallion Oilfield has no regrets in purchasing and using WhatsUp Gold and says it's been a great tool. But like any software, he explains, upgrading WhatsUp Gold can cause slight issues. "We've had a few issues with upgrading to the latest version, with a couple of bugs here and there that Ipswitch was able to fix right away," he says.

Overall, Stallion Oilfield's experience with Ipswitch's WhatsUp Gold has been positive. "The features we get the most use out of is the WMI monitoring and the Windows Event monitoring, because it gives us a lot of visibility into our application layer," says Buhigas. It also lets Stallion Oilfield monitor its SQL server, Exchange server, and all of the custom applications it has deployed.

Thanks to Ipswitch's software, Stallion Oilfield Services is able to continue serving its customers promptly and proactively. "[WhatsUp Gold] fixed the problem it was meant to solve." □

Ipswitch WhatsUp Gold

A network monitoring and management solution designed for any size of business, SMB to enterprise, offering full visibility and complete control of network events.

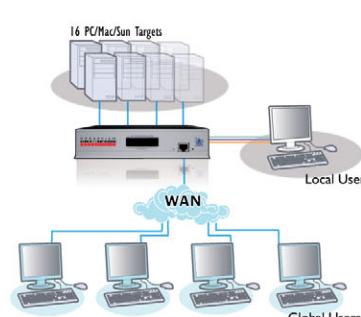
"[WhatsUp Gold] has allowed us to be very proactive to what's happening in our network," says Pedro Buhigas, director of technology at Stallion Oilfield Services.

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16 ports and 4 IP users: Adder turns up the heat on existing KVM over IP technologies

New CATxIP5000 challenges existing enterprise KVM perception

The AdderView AVX5016 IP is the culmination of Adder's KVM over IP expertise. This new device offers 4 non blocking simultaneous IP connections together with a local port (5 separate users), and allows the user to control 16 separate devices. The AVX5016 IP is very small and compact enabling you to fit two units side by side to support 32 computers and 10 sessions in just 1U of rack space.

Using Adder's CAM modules, you can connect the switch via CAT5e cable to any type of server including PC, Mac and Sun. Country code reporting, DDC and continuous keyboard and mouse emulation further ensure faultless operation across your unique installation.



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Google To Stop Using Microsoft Windows

Google announced recently that it will discontinue use of Microsoft's Windows operating system within its company, citing security concerns after its Chinese operations were hacked earlier in the year.



Chrome OS

Instead, Google will offer its employees Macs running Apple's OS X or PCs running Linux. Microsoft responded to Google's announcement saying that its products are more secure than those of its competitors and that Google is attempting to focus unnecessary negative attention on Microsoft. Google will soon offer its own OS, called Chrome OS, and with its other cloud-based services, Microsoft claims that Google simply doesn't need Microsoft anymore.

iPad Usage Increases

According to Web metrics firm Net Applications, online usage for Apple's iPad increased significantly last month. The iPad's share rose to 0.09%, which is about two and a half times more than in April. Numbers also showed iPad usage increasing on weekends, when users got online at home rather than at work. The iPad became available in Australia, Canada, France, Germany, Italy, Japan, Spain, Switzerland, and the UK for the first time on May 28, and Apple has already sold 2 million iPads in the U.S. alone.

iPhone Tops Smartphones In Satisfaction Survey

In a survey conducted by ChangeWave Research of about 1,000 people who purchased a smartphone in the past six months, the iPhone finished slightly ahead of models from Motorola in terms of satisfaction. Among iPhone owners, 77% reported being "very satisfied" with their purchase vs. 64% of Motorola smartphone owners. About 51% of HTC model owners were very satisfied, followed by 46% of RIM smartphone owners, 45% of Palm owners, 40% of LG owners, and 35% of Samsung owners. Among specific models, the 32GB iPhone 3GS finished with an 81% satisfaction mark, and the 16GB iPhone 3GS charted a 77% rating vs. the older-generation iPhone 3G's 69% rating. About 69% of Motorola Droid owners reported being very satisfied vs. the 50% rating all other Motorola models garnered. Applications were the favorite feature among owners, while battery life topped all key dislikes.

Senate Staffer To Join Cybersecurity Coordinator's Office

Sameer Bhalotra, the Senate Select Committee of Intelligence's former lead staffer on cybersecurity and related technology concerns, has been tapped as the new senior director of cybersecurity within Federal Cybersecurity Coordinator Howard Schmidt's office. Bhalotra reportedly joins Chris Painter as the only other senior director within the office. Previously, Bhalotra served about three and a half years on the Senate Select Committee of Intelligence. As a member of the intelligence committee, Bhalotra oversaw the cybersecurity budget and served as a member of the Commission on Cybersecurity for the Obama administration.



SSDs For Servers

When To Use SSDs & What Type You Should Use

by George Crump

• • •

SSDs (SOLID-STATE DRIVES) are a hot topic for consideration in many small to midsized enterprises. One of the simplest areas to implement SSDs is right in the server itself. "The advantage of directly attaching SSD technology to the server is that it significantly reduces the latency of the storage network," says Robb Mankin, senior director of enterprise SSD products at Micron (www.micron.com).

Implementing SSDs In Servers

Because SSDs typically use the same interfaces and form factors as hard drives, installing an SSD can be as simple as replacing the mechanical hard drive with an SSD, copying the image of the mechanical drive to the SSD, and rebooting.

"For enterprise environments that are more concerned with performance over capacity, SSDs are a good solution," says Mankin. "If you have a server that will never need the capacity of today's mechanical hard drives, why use them? Instead, it makes more sense to start with an SSD since they offer several benefits that hard disk drives can't, including improved performance, lower boot times, and reduced power consumption."

If replacing the whole boot drive won't work, then it may make sense to consider a more progressive approach. Mike Chenery, president and co-founder of Pliant Technology (www.plianttechnology.com), suggests adding an SSD to the server (keeping

(www.lsi.com). "Using software in conjunction with a RAID controller, SSD drives can accelerate read/write access from a RAID volume populated by standard mechanical hard drives to the application that the server is supporting. This is one of the most cost-effective and least disruptive ways to begin to implement SSDs in the SME," says Marchand.

Using SSD systems as a cache for mechanical hard drives also means that the SME does not need to become an expert in database tuning. By selecting the right RAID controller and enabling the caching driver, the server and its application benefit from a simple storage I/O performance upgrade. No changes need to be made to the application, and even smaller SSDs can make a significant improvement in performance.

For larger environments that need to move beyond caching and drive form-factor SSDs, the other server option is PCI-E-based SSS (solid-state storage) cards. Because PCI-E-based cards can support more power (25W) than current SSD form factors, an SSS device can support more flash die with more active die concurrently, increasing both performance and capacity, advises Marchand.

Capacities of 400GB or greater are commonly available for PCI-E-based SSS cards compared to maximum capacities of about 256GB for form-factor SSDs. This allows even larger databases to be moved to flash-based SSD systems, meaning that entire databases can be moved to flash.

"The advantage of directly attaching SSD technology to the server is that it significantly reduces the latency of the storage network."

- *Micron's Robb Mankin*

the current mechanical drives in place, as well) and designating that all new data is written to the SSD. "Great examples of this are email and Web files. It is relatively easy to configure these applications to start writing new data to a new location, and it is almost always the newest data that you want," explains Chenery.

It is important to make sure a data protection method is selected. There are multiple methods, and the simplest is to mirror (RAID 1) two SSDs inside the server. A mirror is very simple to enable, is cost-effective, and has little if any impact on CPU performance. Another option is to use a CDP (continuous data protection) application that will periodically update a mechanical hard drive (or array of HDDs) with the new or changed data from the SSD.

SSDs As A Cache

For environments that are not able to fulfill the entire storage needs of the server with a single SSD, a more hybrid approach may be in order. "One of the simplest ways to leverage [the] SSD is as a very large cache," suggests Ed Marchand, director of strategic planning in the Storage Components Division at LSI

PCI-E-based SSS cards should be viewed not only as storage accelerators, but also as a lower-cost and more stable option for internal server RAM, recommends Rick White, CMO at Fusion-io (www.fusionio.com). "Typically when a server is configured with more than 32GB of RAM, it is so that memory can be used by an application as a cache to help improve storage I/O. The problem is that because RAM is volatile, applications don't build an index structure to organize

Maintain Data Constancy In A Shared Environment

Server SSDs are often implemented into environments that already have shared storage. A risk is that this places data outside of the normal protection process. Although this is not a risk in environments that use SSD systems as a cache, because the SSD is temporal in nature, it is a risk in environments where just specific components of the database are moved to SSDs.

"Customers need to make sure that the SSD systems are backed up like any other drive in the environment or that other data protection measures are taken. For example, the customer could use a volume manager that has a preferred mirror option so that data is written and mirrored on both SSD and mechanical drives, but reads are all served from the SSD storage," advises Jamon Bowen, director of sales engineering at Texas Memory Systems (www.ramsan.com).

Key Points

- Implementing SSDs (solid-state drives) in servers is a simple way to begin the move to SSD technology and eliminate the need to implement or fine-tune a special storage network.
- There are a number of server-based SSD deployment options available, and they vary by cost, disruption to the environment, and performance improvement.
- Environments with databases, email servers, or Web fronts should give server-based SSDs serious consideration. The likelihood of SSDs making a measurable performance improvement in those environments is high.

the data placed there, [and] they must scan that memory from beginning to end or until the data is found," says White. "The larger allocation of memory, the longer the scan time; while clearly faster than mechanical storage, it is not much faster than flash memory. Because flash presents itself as storage and is accessed via the operating system's storage API, the application will build these indexes and be able to find data much faster with no chance of a cache miss, if the whole database is on that flash storage."

When To Use

Despite SSDs' continued price reductions, they still represent a more expensive storage platform than mechanical drives when only looked at from a cost-per-gigabyte perspective. "The use cases for SSDs have expanded greatly in the last few years. It is not just for performance-at-all-costs environments," indicates Jamon Bowen, director of sales engineering at Texas Memory Systems (www.ramsan.com). "Database applications, scientific computing, and applications with a Web front end are typically all candidates—basically any application where higher performance generates a positive ROI," he says.

Although there are tools available to bring the decisions of when to use SSD and SSS systems down to an exact science, there are some telltale signs to look for. For example, environments that are using added drives to RAID volumes to address performance but not capacity should look to SSDs to handle the performance demands almost permanently, as well as reducing power requirements vs. a mechanical drive-based array. ■

Data Recovery From The Cloud

Make It Part Of A Cloud Storage Strategy

by Elizabeth Millard

• • •

ALTHOUGH SOPHISTICATED TECHNOLOGY at cloud providers can serve up high levels of storage optimization, hardware is still at the root of the tech, and humans still run the environments, which means that clouds aren't exempt from data loss. While shopping around for a cloud provider, it's imperative to understand what processes are in place for data recovery so that any technology issues don't turn into downtime.

Discussion Point

Pinning down the different types of data loss scenarios with a cloud provider beforehand can be valuable for preventing or

Key Points

- Talk to cloud providers about their data recovery processes before employing them.
- Do a data recovery test with sample data and then run regular tests to make sure the processes are working.
- Don't assume that because data is in a cloud that the enterprise will be less involved with data recovery; in fact, often the opposite is true.

addressing issues, notes Charles Buck, COO at infrastructure management firm Independence IT (www.independenceit.com).

For instance, discussing what might happen when there's a need to restore individual files vs. doing a system-wide restore can yield information on how data is backed up in the cloud. "If you've selected a cloud backup service that's only copying your data and constantly overwriting changes as you make them, you will find yourself entirely out of luck when you need to restore individual files as they existed at a certain point," says Buck. "At best, you'll have to reconstruct whatever data you're missing, and at worst, the earlier data you'd hoped to recover can never be re-created."

It's important to ask how systems are managed for redundancy and protection against data loss and to fully understand the process for restoring data, Buck says, adding: "Develop a process chart that follows the data management path from original creation all the way through to

restoration. When you understand the process, test it with sample data. Then test the process once a month. When the time comes that you really need to recover lost or erroneously changed data, you'll be thankful you know the steps by heart and have confidence earned by your testing."

Combining Efforts

For some data centers, switching to a cloud may involve bringing along a third-party data recovery firm that's done consulting or recovery for the enterprise in the past. This can sometimes require more effort in terms of coordination, but it provides yet another level of protection, says Jeff Pederson, manager of Ontrack Data Recovery operations at Kroll Ontrack (www.krollontrack.com).

Pederson notes that with a service provider, the data center isn't in possession of the hardware, and cloud providers may be reticent to hand over their equipment. However, as long as they grant the recovery firm some level of access, they can do recovery work.

One tricky area when it comes to an outside recovery firm doing work on behalf of a client can be interruption of a preset backup schedule, Pederson adds. "We need to have exclusive access to that media, so nothing is written to it behind our backs," he says. "It's a couple extra hoops to jump through, but nothing extraordinary. The provider shouldn't be surprised by requests like that."

Because backup processes may have to be tweaked, sharing data with other companies is less than ideal, notes David Logue, Ontrack's remote data recovery lead engineer. He says, "Dedicating disks to just your data makes recovery a lot easier."

From Loss To Fixed

If a company already has data storage at a cloud provider and then suffers a data loss event, it's still possible to get back up and running, depending on the type of data and the severity of the loss.

"The reason many enterprises use clouds is that they want an easy backup solution but don't want to use in-house resources to do it," says Eric Burgener, senior vice president of marketing of disaster recovery firm InMage (www.inmage.com). "Depending on the scenario, cloud providers should give you options for what can be done for recovery."

If it's just individual files, for example, they can be recovered over the network, he

"The reason many enterprises use clouds is that they want an easy backup solution but don't want to use in-house resources to do it."

- InMage's Eric Burgener

says. But when large amounts of data must be recovered, it is sometimes more efficient to employ a "data shuttle"—basically, a copy of the data is made at the cloud provider on removable media (disk or tape) and then sent to the client.

In general, simply building more awareness about data recovery into the

cloud management process can be helpful, notes Pederson. He says, "Physical disks fail, and there's always a chance that people will mess up and delete something accidentally. . . . Just because you're using a provider for data storage doesn't mean data recovery is out of your hands." □

Ask The Right Questions

Making sure that a provider can recover data in the event of loss begins with an understanding of what your provider is promising, notes Charles Buck, COO of Independence IT (www.independenceit.com). He suggests that before choosing a cloud provider, data center managers get the answers to these questions:

- Is your provider storing real-time or near real-time data for you?
- Is the provider taking snapshots at specific intervals?
- Is it archiving data for "roll-backs" or point-in-time restores?
- If the provider is archiving data, at what intervals are the archives maintained and subsequently overwritten?
- What is the provider's own backup, business continuity, and disaster process?

HEMOCO SOFTWARE LANSWEEPER 4.0

NEW PRODUCT

by Blaine Flamig

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the network. Additionally, Lansweeper can track hardware changes to inform you when components have been removed or replaced. Software-wise, you can track and audit installed applications on clients and conveniently calculate the cost of missing licenses for software and operating systems.

Lansweeper includes Active Directory integration to amass user and system details and create specific reports for organizational units and assign photos to users to more easily identify who has been using specific systems and when.

Lansweeper can also assist in recovering keys for more than 300 products; create such customized actions as remotely installing software and running various scripts; and accumulate all eventlog activity for scanned computers in one location for viewing.

Lansweeper
network inventory

lansweeper@hemoco.com
www.lansweeper.com

Storage Encryption

Product

Addonics CipherChain ExpressCard



Description

The Addonics CipherChain ExpressCard for notebooks securely encrypts data heading to your external hard drive or SSD on the fly. It doubles as a hardware token to decrypt the data you demand from the drive, letting you access your data without client software, a password, or biometric authentication. The upshot is that your external drive will be unreadable should it be stolen or misplaced. The CipherChain's data interface utilizes a fast eSATA hybrid port with a provision for USB power.

- 256-bit AES full-disk encryption
- Compatible with ExpressCard 34 or 54 slots
- NIST- and CSE-certified encryption engine
- Identical cipher key sets available for use with multiple devices

Best For: Users with a need to protect top-secret data.

Price: \$89

Contact

(408) 573-8580
www.addonics.com

Check Point Abra



The Check Point Abra is an encrypted SanDisk USB flash drive that turns a Windows computer into a secure, portable workspace with the user's desktop, application list, files, and email. It sports built-in VPN connectivity and Check Point virtualization and security features.

- Hardware and software encryption
- Program control regulates select application types
- Virtualization technology isolates a work session from the host
- Plug and play for ease of use

Best For: Users, contractors, and/or remote workers.

Price: \$140 for 4GB; \$210 for 8GB

Check Point Full Disk Encryption



Automatic encryption of notebook and desktop hard drives protects critical information and prevents corporate data breaches. Check Point Full Disk Encryption provides a high level of data security with multifactor preboot authentication and strong encryption algorithms. The entire drive's contents, including the operating system and even temporary files, are automatically encrypted for a completely transparent end-user experience.

- Safeguards corporate information from unauthorized access and data breaches
- Centralized deployment, management, and logging simplifies administration
- Security certifications include FIPS 140-2, Common Criteria EAL4, and BITS
- Comprehensive platform support includes Windows 7, Mac OS X 10.6 (Snow Leopard), and Linux

Best For: Enterprises and organizations with mixed platforms.

Product

Hitachi Travelstar 7K500



Description

The Hitachi Travelstar 7K500 is a hard drive suitable for laptop use as well as server duty. It comes with optional hard drive-level and bulk data encryption, which is useful for immediately wiping the drive at the end of its life cycle. This Travelstar is designed to be both shock-tolerant and easy on battery life for mobile applications. Hitachi also touts its suitability for use in surveillance systems, routers, and more.

- Compliant with the TCG Opal Storage Security specification
- 7,200rpm rotational speed for performance
- 2.5-inch form factor
- Capacity range of 120 to 500GB

Best For: Businesses with a need for data security in notebooks, servers, and elsewhere.

Price: \$159.99 for 500GB (estimated)

Contact

(800) 801-4618
www.hitachigst.com

PGP Portable



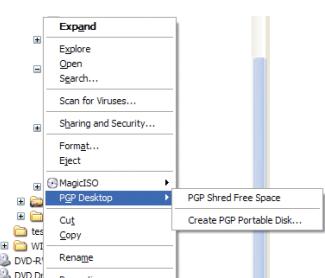
The idea underlying this PGP application is to enact portable software-based data encryption on any removable storage device, disc, or network share. After your IT department uses PGP Universal Server (sold separately) to create PGP Portable media, end users can access said media using a simple passphrase. This allows for easy sharing of protected data as well as read/write collaboration without requiring users to install any software.

- Ideal for data sharing with users who do not have any PGP software
- Create PGP Portable on Microsoft Windows using PGP software
- In-place editing enables secure multiuser collaboration
- Enables disaster recovery and forensics
- Supports automation and provisioning

Best For: Midsized to large enterprises.

Price: \$37 per user and up

Proofpoint Archive



Proofpoint Archive is a software-as-a-service solution that automatically captures email in a centralized, searchable repository for legal discovery, compliance, and mailbox storage management needs. Although Proofpoint manages the data, the archive is secured using the company's patented DoubleBlind Encryption process that ensures Proofpoint can never read it.

- Automatically stubs large attachments and removes PST files
- Provides fast search capabilities
- Low price point
- Rapid deployment

Best For: Medium-sized to large enterprises using Microsoft Exchange.

Price: \$30 per user per year

Contact

(650) 319-9000
www.pgp.com

(408) 517-4710
www.proofpoint.com

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Marty Sems

Check Point Media Encryption



Check Point Media Encryption secures sensitive corporate data by encrypting removable media such as USB storage devices, CDs, and DVDs. It's a device and port control solution integrated with a single endpoint security agent. Media Encryption's aim is to simplify compliance efforts and reduce administrative overhead, according to the company. All device content is automatically encrypted in the background without impacting the user, Check Point says. No client installation is required for secure access to encrypted media on unmanaged computers.

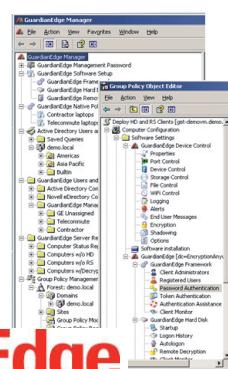
- Supports Windows 7
- Blocks incoming malware
- Comprehensive control of endpoint ports and protection of corporate data stored on removable media and devices
- Seamless integration with Windows' CD/DVD wizard and Nero 9
- Simplified administration and operation with single agent installation, centralized management, and central policy enforcement
- Integrated endpoint and network security capabilities, including centralized logging of data movement and media usage for streamlined compliance and forensic analysis

Best For: Businesses with removable-storage security concerns.

(800) 429-4391
www.checkpoint.com

GuardianEdge Hard Disk Encryption

GuardianEdge



GuardianEdge says its Hard Disk Encryption reduces security management, implementation, and deployment costs by allowing organizations to leverage existing IT infrastructure. It natively integrates with Microsoft Active Directory, for which it features single console support along with Novell eDirectory and non-domain end points. It also can manage other GuardianEdge data protection products to simplify organization and facilitate administrator access to endpoint data protection.

- Provides strong protection for sensitive data
- FIPS 140-2 certified
- Supports 128- and 256-bit AES encryption

Best For: Enterprises and organizations of all sizes, including health care, government, financial services, and education.

(866) 277-7760
www.guardianedge.com

GuardianEdge Removable Storage Encryption

GuardianEdge



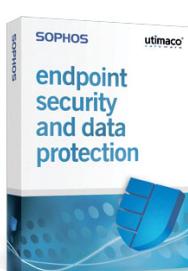
Removable storage devices can put businesses at risk of malware infection and data loss. GuardianEdge Removable Storage Encryption attempts to solve this problem by encrypting data by policy on any storage device or media. This capability lets employees safely transport and use data on portable media and securely distribute data via email. GuardianEdge says its technology also minimizes deployment, management, training, rollout, and support requirements by making maximum use of existing infrastructure.

- Supports USB flash drives, external hard drives, and CDs/DVDs in addition to other external storage devices such as MP3 players, phones, and cameras
- Works with GuardianEdge Device Control to monitor and control device usage for file transfer activity
- Applies policy-based encryption
- Combines support for Novell eDirectory and Microsoft Active Directory in one console
- Natively integrates with Active Directory

Best For: Enterprises and organizations of all sizes, including health care, government, financial services, and education.

(866) 277-7760
www.guardianedge.com

Sophos Endpoint Security & Data Protection 9.0



Sophos Endpoint Security and Data Protection offers a single integrated solution for both anti-malware and data protection. A sole agent delivers antivirus and antispyware, a client firewall, data loss prevention content monitoring, management of removable storage devices, and detection and blocking of unauthorized software. Combined with integrated network access control and encryption to ensure policy compliance and secure your data, the product provides preventive endpoint and data protection to save you time, money, and resources. A single license means you can protect all users and computers across Windows, Mac, Linux, Unix, and other platforms.

- Can whitelist or blacklist VoIP, IM, P2P, and other applications
- 24/7/365 technical support included in price
- Offers compliance and user-based reports; reports can be customized and emailed to select recipients

Best For: Midmarket enterprises with 100 to 5,000 users or more.

Price: \$68.50 per user (500 users; three-year license)

(866) 866-2802
www.sophos.com

Sophos SafeGuard Easy 5.50

SOPHOS

Sophos SafeGuard Easy protects confidential data on laptop and desktop PCs with full-disk encryption for internal and external hard drives, and it does so easily and transparently, the company says. If a PC is lost or stolen, the encrypted data will be unreadable even if the hard drive is removed. In addition to protecting your sensitive data, SafeGuard Easy helps your business comply with data security regulations.

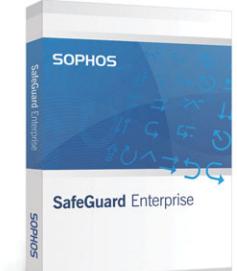
- Transparent full-disk encryption for laptops and desktops
- User-friendly power-on authentication, synced with single sign-on to the OS for added convenience
- Biometric authentication with Lenovo fingerprint readers
- Encryption compliance monitoring that is easily integrated with existing system management tools
- Recovery options for keys, data, and forgotten passwords, even when the help desk cannot be reached, to ensure that your operations can continue
- For centralized management, there's an upgrade path to Sophos' advanced data protection solution
- Advanced tech support options available

Best For: Midmarket enterprises with 100 to 5,000 users or more.

Price: \$50 per user (1,000 users for one year)

(866) 866-2802
www.sophos.com

Sophos SafeGuard Enterprise 5.5



SafeGuard Enterprise provides multilayered endpoint data security combining encryption and DLP. The centrally managed solution secures data on desktops, laptops, PDAs, smartphones, and removable media. Its transparent data encryption prevents malicious users from reading lost or stolen media, and it even enhances user productivity, according to Sophos. SafeGuard Enterprise protects confidential information from data breaches in accord with regulatory mandates. A modular information protection control solution, SafeGuard Enterprise enforces policy-based encryption for PCs and mobile devices across mixed environments.

- Prevents endpoint data leakage via wireless and physical interfaces and removable devices
- Central administration console
- Modular architecture to fit your organization's needs
- 24/7 tech support comes standard; advanced support options available

Best For: Midmarket to large enterprises with 100 to 5,000 users or more.

Price: \$60.25 per user (1,000 users for one year)

(866) 866-2802
www.sophos.com

Inline Threat Prevention

TippingPoint Focuses Its Attention On Effective, Easy-To-Use Intrusion Prevention Systems

by Robyn Weisman

FROM ITS BEGINNINGS IN 2001, Austin, Texas-based network security provider TippingPoint, now a part of HP, has focused on network security. At the time of its inception, most network security solutions were reactive in nature. "You'd look at your network traffic, and you'd see that you had some malicious traffic come through last week, and someone was able to take such and such," says Michael Callahan, senior director of worldwide security product marketing for HP TippingPoint. "Our team [felt] there had to be a better way of monitoring network traffic."

The engineers at TippingPoint (www.tippingpoint.com) subsequently developed an appliance that could be dropped inline into a network without requiring any network downtime, while at the same time providing a high accuracy rate of stopping malicious traffic before it could do any damage with almost zero false positives. This strategy of providing real-time network protection before it was common to do so led to its purchase in 2004 by network infrastructure giant 3Com. In April, HP completed its acquisition of 3Com and has since integrated TippingPoint into its network solutions division.

Real-Time Network Solutions

TippingPoint's first IPS (intrusion prevention system) was introduced in 2002. According to Callahan, TippingPoint predicted that networks were going to be increasingly integrated into people's lives. "You hear these fancy stories about space-age technology [that will] connect your car or your refrigerator to a network—but these stories aren't science fiction. It's going to happen, and so it's important to stop threats in real time,"

Callahan says. "When we came out with our first IPS appliance, we were the only ones doing that, and now the market has evolved to the point where people understand the importance of this type of solution."

Today, TippingPoint offers a wealth of different IPS solutions for networks of all sizes, from large centralized data centers to remote branch offices. Its next-generation N-Platform series of inline IPS devices has been built on an

disrupting networks, he must have confidence that the appliance will stop threats without continually having to tune it. "Our solutions are preconfigured to allow good traffic through and stop bad traffic with minimal management," Callahan says, adding that more than three-quarters of TippingPoint's customers say they are able to configure and deploy these appliances in less than two hours. "That's from cutting the tape on the box to walking away and getting a coffee," he says.

Moreover, TippingPoint DV Labs, a team of security experts, is constantly pushing out filters, fixes, and alerts that the company packages up as Digital Vaccines, or DVs.

"We deploy these signatures and filters automatically. Because we built our [IPS solutions] to be inline devices, you can set [receipt] of our DVs to be automatically distributed to your devices with virtually no setup. You can walk away and focus on other critical business," says Callahan. "And when a new threat comes out, we can have a fix pushed out almost at the same time as we develop it."

Of course, this automation is not an either/or situation. You can choose which fixes you want to deploy and which filters you want to turn on at

HP TIPPING POINT

(512) 681-8000
www.tippingpoint.com

- TippingPoint, now a part of HP, is known for its IPS (intrusion prevention system) appliances, which provide companies with threat protection and ease of use.
- The company also offers Digital Vaccines, which are bundles of filters and fixes that can be deployed automatically or selectively to your IPS appliances.
- "Our solutions are preconfigured to allow good traffic through and stop bad traffic with minimal management," says Michael Callahan, senior director of worldwide security product marketing for HP TippingPoint.

Designed For All Types Of Traffic

Callahan describes TippingPoint IPS solutions as purpose-built appliances, with hardware and software created specifically with intrusion prevention in mind. "Our solutions are not some generic box you buy off the [shelf]. We offer that fundamental security technology, based on our DVs, and have developed a suite of appliances that are designed for what your network looks like," he says.

TippingPoint realizes that although SMEs may be similar in number of

TippingPoint®

extensible security framework that uses a modular software design that allows for faster security filters and services development and deployment, as well as providing greater capacity for deep packet traffic inspection.

All TippingPoint IPS systems are built on top of TippingPoint's own Threat Suppression Engine, or TSE, a hardware-based platform that re-creates and examines flow payloads by parsing more than 170 network protocols at the application layer. In addition, TippingPoint's TSE performs IP defragmentation, TCP flow reassembly, flow state tracking and blocking, and traffic shaping and can run thousands of filters at once without negatively impacting its performance or its precision in stopping malicious threats of all types.

Making Management Minimal

Callahan calls the ability to easily manage TippingPoint appliances a key tenet of the company's philosophy. Not only does an IT or data center manager need to feel confident that he can place a TippingPoint IPS solution inline without



Part of the N-Platform series of inline IPS devices, the 2500N appliance allows for faster security filters and services development and deployment.

HP TippingPoint Featured Products

Product	Description
TippingPoint Digital Vaccine	Filters designed and pushed to TippingPoint IPS appliances by TippingPoint's DV Labs security team.
TippingPoint N-Platform IPS Series	An inline IPS series that provides real-time, proactive network security protection that integrates easily with data center networks.
TippingPoint SSL Appliance	Appliance that provides high-performance inspection and decryption of secure network traffic to prevent network attacks via SSL.
TippingPoint ThreatLinQ	Threat-monitoring portal that lets enterprises find out real-time information about network threats and proactively optimize their network security.
TippingPoint vController	Software solution that provides ability to view, inspect, and protect virtual traffic at a granular level.

your option. TippingPoint also offers specialized DVs such as its Reputation DV and its Web Application DV, the latter of which can catch vulnerabilities in custom Web apps without impairing network performance.

Many of TippingPoint's customers are happy to trust TippingPoint plug-and-play security capabilities. For example, the American Red Cross needed an IPS solution during the Hurricane Katrina crisis that would protect sensitive data and biomedical regulated devices from malware and other threats in real time and chose TippingPoint's IPS solution over those from other providers, which TippingPoint donated to the organization.

"The Red Cross had to set up these medical villages and had to get its networks up and running quickly while protecting sensitive patient and personal information running across those networks that are potential targets," says Callahan, adding that the organization's IT personnel saw results almost immediately.

employees, they have diverse network needs. Your 250-person company may use a small network and not need very much in the way of bandwidth, so you may find one of TippingPoint's smaller IPS devices that can handle 20Mbps sufficient. On the other hand, another company of your size may have a strong e-commerce presence and need something that can process multiple gigabytes of real-time traffic every second. "The key is that the security protection, effectiveness, and research we offer is the same up and down our product line," Callahan says.

In keeping with the widespread migration to virtualized environments, TippingPoint offers a relatively new solution called vController that works in conjunction with TippingPoint's IPS appliances. vController routes your virtualized traffic out of the VM (virtual machine) through the TippingPoint IPS device, making sure only clean traffic passes through the VM. P

Tips On Developing Security Metrics

Business Managers Need Metrics That Summarize Risk Exposure, Not Incident Statistics

by Kurt Marko

• • •

THE WELL-WORN BUSINESS AXIOM "if you can't measure it, you can't manage it" resonates with engineering-dominated cultures such as IT. Yet one of IT's most important responsibilities—security—often suffers from a lack of meaningful metrics. Sure, network engineers can easily report how many connection attempts their IPS blocked in the past month or how much malware was nixed, but these are largely meaningless numbers to non-specialists, particularly without context and history.

Forrester Research Vice President and Principal Analyst Khalid Kark makes a distinction between measures and metrics. "There are a lot of people focused on the operational and tactical and not on the strategic," he says. "There is definitely a lot of measurement going on, but not a lot of metrics"—that is, the collection of specific data points instead of an aggregated analysis of the overall security and risk profile.

Given the array of thoroughly instrumented security software deployed throughout the typical enterprise, there's certainly no short-

Key Points

- Increased business exposure to IT security risks and more stringent regulatory compliance requirements have created a new audience for security reports composed of non-technical business managers and executives.
- Developing metrics that are meaningful to various constituencies requires a disciplined approach, focusing on business needs and acceptable risk levels to create comprehensive, aggregated measures aligned with corporate success objectives.
- Metrics cannot be limited to incident statistics but should incorporate aggregated measures that reflect the business impact of security policies and activities. Reports designed for executives should be limited to a handful of high-level measures, benchmarked, and tracked over time.

age of data. In fact, it can easily become an overwhelming fire hose of figures. Therein lies the problem. According to a survey by Forrester Research, "The most significant challenge cited by 57% of CISOs implementing metrics programs is how to evaluate the significant amount of data available to enable security metrics reporting."

Translating data into meaningful metrics that can drive business decisions requires research and planning and is fraught with issues.

Best Practices

Given the rising awareness of cybersecurity in the enterprise, there are several constituencies for security metrics. Chris King, director of product marketing at Palo Alto Networks (www.paloaltonetworks.com), says, "There are constituencies that understand some of the technical nuances, and [there are] those that don't." IT staffers require detailed and actionable technical data on security operations, while managers just need a summary.

"They don't care about the technical nuances," says Alan White, director of information security consulting at SecureWorks (www.secureworks.com). Business unit managers or those responsible for

regulatory compliance represent another level of measurement abstraction and generally only care about the subset of security metrics affecting their particular applications or data. At the top of the reporting chain, White says, corporate executives are mainly interested in the overall financial ramifications of any security breaches.

Before tracking any security measure, White says IT must assess its value as either a leading or lagging indicator—whether it's predictive of future problems or descriptive of past mistakes or exploits. IT must also understand the degree to which a security measure tracks something within IT's control. Given the array of available metrics, Forrester's Kark says one approach to narrowing the field is to create a menu and allow business stakeholders to pick only those they find useful and want to track every month.

Using case studies examining implementations at various companies, Kark has synthesized some best practices for fledgling metrics programs. For starters, take a comprehensive approach. "Look across teams and departments to identify security processes or processes with controls embedded within them. In a process-based metrics model, you should be able to describe the concise state of security in your organization." Next, define ownership. "For a process-based approach, clear accountability is the key element for success." He says that security process owners should have clear expectations for how to collect, update, maintain, and evolve the metric to reflect changing conditions.

Kark also says it's important to remember your audience, adding that each metric should have specific value to particular stakeholders. "A laundry list of stats and graphs will distract your audience from key issues and strategic initiatives. Keep your customized message simple and direct." In addition, Kark recommends using tools to automate the process. "A security metrics program is not sustainable without some automation; if done manually, it will be inefficient, prone to human errors, and not agile enough for the rapidly changing environments."

In addition to customizing metrics for specific audiences, metrics should be reported in terms and formats familiar and meaningful to each audience, according to SecureWorks' White. For example, IT security engineers probably want raw figures and trend lines, while business managers may be accustomed to a balanced scorecard of key performance indicators. Palo Alto Networks' King adds that a common vehicle for metrics reporting is a customizable security dashboard using embeddable XML gadgets that can display charts, meters, and scorecards.

Common Metrics

The most common security metrics track incidents such as the number of detected network intrusion attempts or amount of malware removed from client PCs and email, largely because these are easy to measure and relevant to the IT security staff. Another measure developed by the NIST is the security workload index, which tracks the number of important vulnerabilities that information technology security operations staff are required to address each day.

But King cautions that focusing too closely on incidents can have unintended consequences. "With all metrics, you always have to look at the behavior you're incenting. If you build all your metrics around incidents, you're going to incent the security team to never have an incident, which means you're either going to underreport or you're going to lock everything down and hamper the business." Kark says he hasn't seen security metrics misused in this way. "I definitely haven't seen measurement introducing wrong actions," but he adds IT should be aware of this possibility.

To balance risk reduction and technology enablement, White says IT should work with business units to determine those applications and network services the company can't live without, set acceptable risk and service levels, and design metrics that track these services.

Formal IT programs for reporting security metrics are still relatively rare, according to Kark, and require significant study, planning, and effort to yield results meaningful for business management and executives. He adds, "I'm a big proponent of having less than 10 metrics at the management level; five to six is more than enough, but you need to spend a lot of time on the due diligence—I recommend 12 to 18 months" before rolling out the program. □

Seven Steps To Building A Security Metrics Program

The SANS Institute has a simple guide for developing security metrics. To facilitate understanding and acceptance at all levels of a new security metrics program, it advises grounding the program in process improvement frameworks that are already familiar to the organization, such as Six Sigma or Hoshin Planning. Regardless of the underlying framework, you could use the seven key steps below to guide the process of establishing a security metrics program.

1. Define the metrics program's goal(s) and objectives.
2. Decide which metrics to generate.
3. Develop strategies for generating the metrics.
4. Establish benchmarks and targets.
5. Determine how the metrics will be reported.
6. Create an action plan and act on it.
7. Establish a formal program review/refinement cycle.

This seven-step methodology should yield a firm understanding of the purpose of the security metrics program; its specific deliverables; and how, by whom, and when these deliverables will be provided.

SOURCE: "SANS INSTITUTE INFOSEC READING ROOM: GUIDE TO SECURITY METRICS", BY SHIRLEY C. PAYNE; JUNE 19, 2006.

RADWARE DEFENSEPRO

NEW PRODUCT

by Marty Sems

Professional Defense



Radware DefensePro

An integrated security appliance that keeps new and known threats from bringing down your company network.

WHEN IT COMES to girding your network with armor, so to speak, you want each piece to cover as much as possible. Toward that goal, Radware is now fielding the sole, fully integrated intrusion prevention system/network behavioral analysis/DoS mitigation appliance on the market.

DefensePro, part of the company's APSolute Attack Prevention security solution, is based on Radware's OnDemand Switches (platforms SP1, 2S1, 2S2, or 3S2). Its eight variants address the needs of enterprise of all sizes, including those with data centers with high throughput requirements, such as in electronic commerce and service provider applications.

Supported network throughput ranges from 100Mbps on low-end models featuring IPS and behavioral protection up to more than 12Gbps on data center editions without IPS. Part of the reason is Ethernet support up to 10Gbps. Another ingredient is the hardware acceleration

provided by DefensePro's DoS Mitigation Engine and its StringMatch® Engine for signature detection. These units offload their designated tasks from the CPUs, leaving the processors free to continue overseeing overall security.

In addition to frequently updated signatures, DefensePro makes use of SYN cookies, real-time behavioral analysis, protocol and traffic anomaly detection, and stateful inspection to guard against threats both emerging and known, Radware says. When it analyzes one of the former in progress, it automatically creates a new signature for the threat and begins blocking it without delay. In this way, application misuses can be thwarted along with zero-day threats (called "zero-minute" by Radware) and DDoS attacks. Even insider attacks can be detected and stopped, the company says. The result for your business is uninterrupted network access, Radware says, which means continuity of operations without costly outages and downtime.

DefensePro supplies maximum ROI for minimal capital expenditure, according to Radware. And the system is upgradable via license instead of hardware forklift to support higher throughput as your business grows, so you don't have to spend more than necessary.

VoIP Phone Systems

Product

Avaya Aura



Description

The Avaya Aura suite provides the foundation for all of Avaya's unified communications and customer service solutions. Available in Branch, Standard, and Enterprise Editions, Aura can be deployed as a traditional IP PBX or in conjunction with Avaya Aura Session Manager. The platform enables users to evolve their IP communications systems by supporting both IP- and legacy-based end points and systems.

- Built-in conferencing and contact center applications
- Supports hybrid communications environments
- More than 700 PBX features
- Advanced workforce productivity and mobility features

Best For: Midsized to large organizations looking to support both new and legacy communications end points and systems.

Contact

(866) 462-8292
www.avaya.com

Avaya IP Office Communications System



Avaya IP Office is a single, compact solution that provides a business communications platform for use on laptops, mobile phones, office phones, or home phones utilizing wired, wireless, or broadband connections. The offering also grows with you, making adding and moving phones easy and inexpensive.

- In the event of a power outage, users with IP phones can automatically failover to another location and retain full communications capabilities
- Proactively identifies potential problems before they cause an outage or disruption
- Emails system alarms from any location
- Automated service prompts relay wait time, promotions, and more

Best For: Small and midsized companies with between five and 250 employees.

Avaya one-X



Avaya one-X is a suite of communications applications and collaboration tools that support unified communications across desktops and laptops, mobile devices, and dedicated IP phones. Products include the Avaya one-X Communicator software, one-X Deskphones, one-X Mobile (smartphone software), one-X Portal (a Web-based client), and one-X Speech (a voice-command platform).

- Software features intuitive user interfaces across multiple platforms
- Hardware supports SIP and H.323 protocols
- Single-number access lets customers easily reach customer service personnel

Best For: Basic communications of enterprise, contact center, and branch office users utilizing both SIP and H.323 protocols.

Contact

(800) 240-0632
www.necunifiedsolutions.com

Product

NEC Univerge SV8100 Communications Server



Description

Designed to be both versatile and scalable for a company's growing business needs, the Univerge SV8100 Communications Server from NEC supports TDM, IP, video, wired, and wireless communications. The SV8100 offers three onboard applications that can be extended to branches and remote locations.

- Converged communications, with data, multimedia, and voice over one network
- Enhanced management
- Pure IP with the flexibility to support TDM
- Customizable advanced productivity applications and collaboration tools

Best For: SMEs looking for a robust, feature-rich, and scalable VoIP appliance.

NEC Univerge SV8500 Communications Server



The Univerge SV8500 from NEC is built using open standards, letting users leverage existing infrastructure, including centralized or distributed conferencing and trunking equipment, for the organization's unified communications needs. The SV8500 is energy-efficient and scalable, supporting voice, UC, and mobility needs for tens of thousands of users.

- Flexibility through open standards
- New modular chassis and interface
- Extensive voice and IP features
- Complete interoperability with existing NEC systems

Best For: Large enterprises looking to set up a pure IP or converged hybrid network.

Polycom SoundPoint IP 335



The Polycom SoundPoint IP 335 utilizes the same Polycom HD Voice technology found in much more expensive systems but comes at an affordable price. This two-line entry-level phone supports the G.722 wideband codec and Polycom Acoustic Clarity Technology 2 and features a high-resolution backlit graphical display.

- Robust interoperability with leading IP PBX and Softswitch platforms
- Integrated Power over Ethernet support (Class 2)
- Advanced functionality, including shared lines, busy lamp field, three-way conferencing, and XML microbrowser
- Dedicated RJ-9 headset port

Best For: Small companies looking for enterprise-class telephony capabilities at an entry-level price.

Contact

(800) 240-0632
www.necunifiedsolutions.com

(800) 240-0632
www.necunifiedsolutions.com

(800) 765-9266
www.polycom.com

PRODUCT SPOTLIGHT

MESSAGING & TELEPHONY

Processor's Product Spotlight highlights options available in key data center product categories, providing product information side-by-side for easy comparison.

Compiled by Andrew Leibman

Cisco Unified Communications Manager Appliance



This server appliance comes with the latest version of Cisco Unified Communications Manager preinstalled, delivering traditional telephony features as well as advanced capabilities such as mobility, presence, preference, and rich conferencing services. Cisco's Unified Communications Manager is designed to cut costs and streamline maintenance and support for end users and IT.

- Up to 30,000 users per cluster
- Centralized configuration and management
- Up to 100 appliances can be combined in a single system
- Highly available through support for multiple levels of server redundancy and survivability

Best For: Enterprises looking to support rich voice, video, data, and mobile applications on fixed and mobile networks.

(866) 556-9087 x4708
www.cisco.com

Cisco Unified IP Phone 6941



The Cisco Unified IP Phone 6941 is a four-line endpoint, available in arctic white or charcoal, that delivers an enhanced user experience and robust business communication services. Features include fixed keys for Directory, Settings, Transfer, Conference, Hold, and Messages; an easy-to-read 396- x 162-pixel backlit monochrome display; and four programmable soft-label keys for access to unified communications features.

- Four tricolor illuminated line keys for at-a-glance call status indication
- Support for single-call per-line appearance
- Display capable of right-to-left language presentation
- Integrated 10/100 Ethernet port
- Full-duplex speakerphone and dedicated headset port

Best For: Companies with moderately active users of voice communications services.

(866) 556-9087 x4708
www.cisco.com

Cisco Unified IP Phone 8961



The Cisco Unified IP Phone 8961, available in white or black, is ideally suited to multimedia communications and supports advanced features in an ergonomic and user-friendly design. The phone features a 5-inch backlit color display, 10 tricolor illuminated LED feature/session keys, and support for high-definition voice for clear reception.

- Integrated Gigabit Ethernet port
- Support for one Cisco Unified IP Color Key Expansion Module
- Support for Cisco and third-party XML and MIDlet applications
- Display is capable of right-to-left language presentation for improved user experience

Best For: Users who need a multimedia-capable desk phone that can handle bandwidth-intensive applications.

(866) 556-9087 x4708
www.cisco.com

Multi-Tech MultiVOIP Voice/Fax Over IP Gateways



Multi-Tech's MultiVOIP Voice/Fax Over IP Gateways are reliable, high-voice-quality solutions that offer E&M (ear and mouth) support and the flexibility to program ports to be FXS or FXO. The gateways' flexibility allows them to accommodate any fluctuation in incoming and outgoing calls without adding more equipment, which reduces total cost of ownership and extends the life of a VoIP solution.

- Ethernet connectivity and full IP compatibility with existing routers and WAN infrastructure
- FXS/FXO/DID and E&M connectors on each channel for direct analog connection to phones, key telephones, PBX extensions, PSTN lines, or PBX trunks
- Supports H.323, SIP, or SPP for sending voice over the Internet

Best For: Small to midsized companies wishing to incorporate IP PBX while maximizing the investments already made in legacy data and voice equipment.

Price: Starts at \$299 (one-, two-, four-, and eight-port versions available)

(888) 288-5470
www.multitech.com

Polycom SoundStation IP 5000



The Polycom SoundStation IP 5000 features a 7-foot mic pickup with 360-degree coverage, making it ideal for up to six participants in smaller rooms and offices. The unit has a small footprint that fits easily on a desk or table, but it supports robust VoIP interoperability, a broad array of SIP call platforms, and Polycom HD Voice technology for crystal-clear calls.

- Integrated Power over Ethernet for easier setup and deployment
- High-resolution display that enables robust call information and supports multiple languages
- Resists interference from mobile phones and other wireless devices while delivering clear voice conferencing with no distractions

Best For: Small conference rooms and executive offices looking for superior voice quality and clarity in an advanced IP conference phone.

(800) 765-9266
www.polycom.com

Polycom VVX 1500



The Polycom VVX 1500 adds crisp, clear video to the host of features and capabilities you expect from a full-featured IP business phone. The offering supports multiple hosted or premises-based IP PBX call control solutions through the Polycom VIP program.

- Color touchscreen interface for voice, video, and applications
- Six-line, feature-rich phone with Polycom HD Voice
- Highly customizable applications platform with open Polycom XML API, integrated micro-browser, and USB 2.0
- Bundled with productivity and personalization applications, including Polycom Productivity Suite, Polycom My Info Portal, and Digital Photo Frame

Best For: Companies that want to combine the power of enterprise-grade telephony with one-touch video communications and integration with key business applications.

(800) 765-9266
www.polycom.com

Toshiba Strata CIX40 IP Business Communication System



Toshiba's Strata CIX40 IP gives small business, branch office, and retail users access to an advanced IP telephony system and enterprise-class business process integration. This system has a base configuration of eight, 16, or 24 IP channels for IP telephone connections, SIP trunks, and IP Strata Net multisystem networking.

- Support for four to 11 trunks with Caller ID and eight to 16 digital telephones
- Voice Mail and Auto Attendant of four, six, or eight ports
- Call Center features allow users to answer incoming customer calls efficiently
- Optional advanced voicemail applications let users customize the system to fit their needs

Best For: Small businesses, multisite offices, retail, restaurants, and more.

(800) 222-5805
www.telecom.toshiba.com

Toshiba Strata CIX200 IP Business Telephone System



The Strata CIX200 gives midsized to large enterprises the option to create a pure IP system or a converged communications system as needed. Toshiba's Strata CIX200 supports up to 96 trunks or 160 telephones and combinations of up to 192 total.

- Multiple Strata CIX systems can be networked together
- Voice Mail and Auto Attendant of four, six, or eight ports
- Advanced voicemail applications can be added to fit your business needs
- Fully upgradeable, protecting your technology investment

Best For: Enterprises, multisite offices, government agencies, retail, restaurants, health care, and more.

(800) 222-5805
www.telecom.toshiba.com

Accenture Report Details Lapses In Tech-Related Customer Service

A recent "Lessons from the Recession" report from global consulting company Accenture details customer service-related concerns that apply equally to consumer and B2B transactions. Although more than half of the participating technology companies indicated that they had acted to improve customer service, few of the consumers surveyed say they noticed any improvement.

And according to Joseph P. Hughes, senior executive at Accenture, service matters. The problem is not that companies don't care about customer service, he notes; they may indeed be making service-related investments, but they may be investing in the wrong things on the one hand and failing to meet rising customer expectations on the other. "Some of the investment has been to reduce costs," says Hughes, "but the path to more profitable, longer-lasting customer relationships centers on improving the customer experience."

Pure cost-reduction measures, such as offshoring, may do little to improve the service itself. The key, according to Hughes, is communication, and customer and third-party forums can play a large part in that. "This is a medium that has been overlooked. A lot of companies threw out a forum, saying, 'Oh, this is great! Other users are going to answer my questions for me.' And some of that's true, but that doesn't mean that you abdicate your support."

Instead of counting on customers to solve other customers' problems, says Hughes, companies should use forums and social media such as Twitter and Facebook to ensure that they have an active communication channel with their customers—one that enables them to track and quickly address issues, real or perceived, as they come up. "If you're leaving one-star Amazon reviews unresponded to, you're in trouble," he says. "You've got to respond with a fix or with fact-based counter-reviews."

Improving Customer Service

What does this mean for data center staff? There's a two-fold lesson here: First, the IT staff works for a company that supplies goods or services or both. The need for excellence in customer service speaks to the part the staff plays in helping the company deliver those goods and services. They may never see the customer, but that doesn't mean they're not there to serve the customer. Everything they do—or fail to do—ultimately affects how well that customer is served. Secondly, even data center staff who deliver only internal services have a customer. The fact that the customer is internal is irrelevant, and Hughes' recommendations nonetheless apply: Communicate often with your (internal) customer, and do it in ways in which that customer is comfortable communicating.

by Rod Scher



CASE STUDY

Unified Voice & Email

CuDerm Moves To Hosted Service From Cypress Communications

by Sue Hildreth

• • •

WHEN DALLAS, TEXAS,-BASED CuDerm relocated its offices last year, the company, which sells skin testing products and marketing services to hospitals and cosmetics firms, also left behind an open-source, in-house phone system in favor of a move to a hosted VoIP and unified communications managed service provided by Cypress Communications. The decision to go from an owned (and open-source) implementation to a completely outsourced solution was one that CuDerm made after evaluating several other providers and the pros and cons of going with a managed service.

The Difficulties Of Phone Ownership

The main motivation for CuDerm's decision to switch telephony platforms was a planned office relocation in August 2009, which presented an opportunity to make a major change in other systems, says CuDerm Vice President John DeRudder. However, it was the constant problems with the company's existing system—a widely used open-source IP telephony platform—and the amount of time the IT staff was investing in trying to make open source work for them, that had also motivated him to make the switch.

"We're a relatively small company, and there's a million and one things that the IT staff could be doing. The last thing they needed on their plate is a phone system with problems," says DeRudder.

One problem with the existing system was occasional noise on the line. Another was that the long-distance service would occasionally cut out, sometimes right before an important conference call.

"We would walk into a conference room and couldn't get a most basic component, a phone, to work," says DeRudder. "When we had clients there, it made us look pretty bad, frankly."

Although CuDerm had hired an outside contractor to set up the system and a consultant to help troubleshoot the long distance and noise issues, performance continued to be a problem. Also, the system lacked the ability to assign employees their own direct dial numbers, meaning that customers had to always go through the main number to reach an extension. Another concern was the lack of a good user interface.

"Getting the phones to ring in the right area was complicated. There wasn't a good workflow for laying out a dial plan," says DeRudder, noting that the concept of open source was appealing, but CuDerm just didn't have the IT staff to make it work.

Go Hosted

When CuDerm opted to change phone systems, it started by conducting a Web search and talking to other companies in March 2009. Although it had no experience with a hosted solution, it considered both purchased and hosted options.

"Cypress came up as a contender, and it was clear they were a large enough

company that we would do business with them," says DeRudder.

The Cypress Communications C4 IP hosted unified communications platform (www.cypresscom.net) was what CuDerm eventually opted for after looking at five other products, including an open-source VoIP platform that was supported by a major computer company and, DeRudder says, also was a strong product. The main factors in Cypress' favor were price and ongoing maintenance.

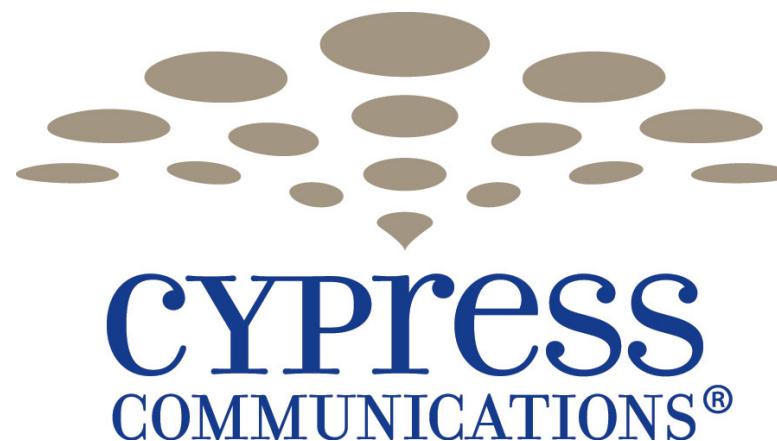
On-premises systems were familiar territory for CuDerm's IT staff. Despite the time and trouble sometimes involved in maintaining an in-house system, CuDerm staff generally knew what to expect in terms of cost and maintenance. However, because of the troubles they'd experienced with the prior phone system, CuDerm's

DeRudder notes that another consideration in Cypress' favor was the probability that any on-premises purchased telephony product could wind up costing the company more than expected if problems appeared that required additional consulting or hardware purchases.

Another factor was the 24/7 on-call service that CuDerm could get from a hosted provider included as part of the monthly fee. "We liked the fact that we could call if we had problems, even for something small like how to set up a conference call," he says. "We had some peace of mind going with Cypress."

Up & Running

The Cypress product implementation took about two months, and it was up and running on Sept. 1 when CuDerm moved into its new offices.



management wasn't so sure it wanted to go through another in-house telephony project on its own.

As DeRudder explains, if CuDerm invested in its own system, it would have to pay for the implementation and configuration services to set it up, but it would still have to handle all of the routine maintenance, end-user assistance, and other troubleshooting itself. "We would have had someone who could do part of it for us, but we'd still deal with the maintenance," DeRudder says.

The combination of the up-front capital costs, the implementation and integration services CuDerm would have to hire, and the likelihood of having to expend a lot of IT time on continued maintenance and management of the system made a hosted solution seem much more appealing. In the case of the Cypress Communications C4 IP, the package was especially attractive, says DeRudder, as it included not only the software platform and services but also all of the equipment and maintenance on the equipment.

The other issue was cost. Although CuDerm did not have to shoulder a capital investment up front, it did have to consider how much it could afford on a monthly ongoing basis.

"For example, if we want to put one phone in the kitchen, and a second in a conference room, and others here and there, they all have to be paid for even if they aren't all being used constantly. So we had to consider the monthly cost of those phones," explains DeRudder, adding that, on the other hand, to purchase a system meant investing at least \$10,000 in equipment up front.

three-, six-, or 30-way conferencing.

CuDerm also likes the softphones that let users make calls from their laptops, and unified messaging, which makes .WAV files out of voice messages and attaches them to email. People can check both their email and their voicemail from the same place, without having to dial into their phones.

"The unified messaging is important because it lets us listen to voicemail as email attachments from any computer," says DeRudder. "Our salespeople like the call routing, because they can route calls to whatever location they're at. Even though we liked the idea of open source, this hosted solution has been a good decision for us. We have someone to call if something goes wrong, which is one of those intangibles that is hard to put a price on."

Cypress Communications C4 IP

A hosted VoIP and unified communications solution with redundant network and dynamic bandwidth for consistent call quality and high-speed data transfer; features include desktop chat, unified messaging, automatic call distribution, and presence information.

"Even though we liked the idea of open source, this hosted solution has been a good decision for us. We have someone to call if something goes wrong, which is one of those intangibles that is hard to put a price on," says CuDerm Vice President John DeRudder.

(404) 869-2500 | www.cypresscom.net

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FEATURED PRODUCT**Need Data Tape Disposal?**

Recycle Your Media Offers Secure, Green Tape Destruction



by Marty Sems

TAPE BACKUP is a fact of life. Cartridges are reliable and cost-effective, and they can be encrypted and moved to offsite data storage for maximum protection from catastrophes and theft.

But there's a question of the best method for secure data destruction. Many enterprises have policies that require them to get rid of tapes of a certain age, even though they may still have life left. It's critical to erase the data on those backup tapes, both for corporate and customer privacy reasons. Plus, it costs money to have a cartridge shredding service physically destroy old tapes, which usually end up taking up space in a landfill.

Recycle Your Media offers a reverse logistics solution to help you recycle tapes. The Newport Beach, Calif., company will buy quantities of 100 or more used

RECYCLE YOUR MEDIA

(949) 757-0100
www.recycleyourmedia.com

Buys old tape media and recycles what is no longer usable, then puts the rest through a 12-point recertification process before reselling them.

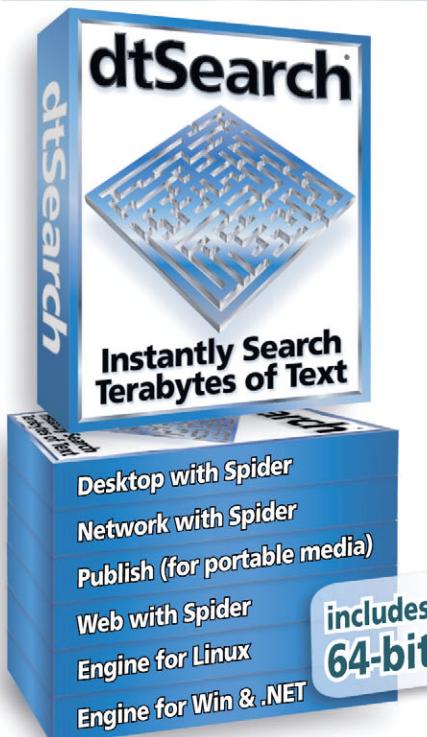


data tapes from your business at "fair market value," arranging and paying for secure shipping, turning an IT expense into a modest source of income.

Recycle Your Media is in the market for a variety of tape formats, including SDLT, LTO, Ultrium, and 3592. The company's technicians offer secure data destruction, obliterating any lingering data from the media and then subjecting each cartridge to a chemical cleaning and close inspection. The firm estimates that one out of every five tapes doesn't make it through its stringent 12-point recertification process. Certified tapes are then offered for resale at lower prices than new cartridges, which offers your IT department an inexpensive source of known good backup media.

Recycle Your Media's data disposal practices are designed to help your SME meet its regulatory compliance obligations and its need to protect sensitive information. Recycle Your Media controls the entire media chain of custody, so it is able to supply your enterprise with legal proof of data destruction.

Secure tape media recycling gives your company another way to demonstrate its environmental conscientiousness. By keeping old tapes out of the trash, Recycle Your Media can assist your enterprise with its "green" credentials, which can bring in additional customers. Smarter resource utilization benefits us all, but it's nice when it benefits your bottom line, too.

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FEATURED PRODUCT**Next-Generation Firewalls Protect Your Data**

Palo Alto Networks Redefines Network Security



by Tessa Warner Breneman

PALO ALTO NETWORKS has developed next-generation firewall technology that enhances your protection against evolving threats targeting your users and data. These firewalls identify applications regardless of the port, protocol, and SSL encryption, and they let you control access to Web 2.0 and other applications based on user identities rather than IP addresses. This helps keep your network and your data safe from increasingly sophisticated cyber criminal activity.

Firewalls from Palo Alto Networks offer enhanced network security through the company's App-ID, User-ID, and Content-ID technologies to deliver unparalleled visibility and control so security

PALO ALTO NETWORKS PA-500, PA-2020 & PA-2050 FIREWALLS

(617) 581-6633
<http://www.cymbel.com/partners/paloalto>
Next-gen firewalls use Palo Alto Networks' sophisticated technology to secure networks and prevent threats, even in high-traffic situations.



personnel can selectively allow business productivity applications on the network while blocking harmful or unnecessary application traffic. The firewalls can also scan applications for threats, removing the need for a standalone IPS product.

Palo Alto's next-gen firewalls are also equipped to handle heavy network traffic flows with dedicated processing and memory for the data and control planes.

The PA-2000 Series includes the PA-2050 and the PA-2020 for medium-sized enterprises and large branch offices. The PA-2050 offers 1Gbps firewall throughput, 500Mbps threat prevention throughput, and 300Mbps IPsec VPN throughput. The PA-2020 provides 500Mbps firewall throughput, 200Mbps threat prevention throughput, and 200Mbps IPsec VPN throughput. Both models support 15,000 new sessions per second. The PA-2020 can support up to 125,000 sessions, while the PA-2050 tops out at 250,000 sessions.

Midsized enterprises or branch offices can also use the PA-500 firewall to protect their networks. It features 250Mbps firewall throughput, 100Mbps threat prevention throughput, and 50Mbps IPsec VPN throughput. It offers 7,500 new sessions per second and up to 64,000 sessions.

With Palo Alto's next-gen firewalls, you can be sure that your network and data are safe from malicious applications and prevent inadvertent data leakage by your users.

Servers

Product

Appro 1U Tetra GPU Server



Description

The new Appro 1U Tetra integrates two CPUs based on the latest AMD Opteron processors and four GPUs based on the latest Nvidia M2050 GPU computing. It delivers the highest density at the best price-to-performance ratio to support technical computational applications.

- Four GPUs based on Nvidia Tesla M2050
- Two CPUs based on AMD Opteron processors
- Up to 1,792 GPU cores for more than a teraflop of precision performance
- Cluster management options and choice of Linux or Windows OS

Best For: High-performance computing and government research.

Contact

(800) 927-5464
www.appro.com

Appro GreenBlade System GPU Expansion Blades



Working in tandem with the Appro GreenBlade System, the Appro GPU Expansion Blades come in a 5U form factor and are configured as CPU/GPU combinations supporting five dual-CPU server blades with five dual-GPU expansion blades per system. The system offers configuration flexibility, density, reliability, and energy efficiency with affordable mix-and-match compute blade options.

- Two GPUs per blade server based on Nvidia Tesla M2050
- Two CPUs per blade server based on AMD Opteron or Intel Xeon processors
- Five blade servers per system for a total of 10 CPUs and 10 GPUs in a 5U form factor
- Cluster management options and choice of Linux or Windows OS

Best For: Energy research, government research, universities, finance, and bioinformatics.

Egenera BladeFrame pBlades With Intel Xeon 5600 Processors



Egenera's converged-infrastructure pBlades are disk-less, anonymous, and interchangeable, enabling automated allocation, repurposing, and failover for any blade. The blades support both physical and virtual workloads, and their unique design enables a data center to pool processing assets and associate configurations with the pool instead of assigning individual servers to specific applications.

- New two-socket blade based on Intel Xeon 5600 Series processors, supporting up to 144GB of RAM
- Fully compatible with all three generations of BladeFrame systems, allowing customers to easily upgrade existing systems
- Manage mission-critical data centers, control data center costs, and improve availability and responsiveness with Egenera's PAN Manager Software

Best For: Dense, mission-critical physical or virtual workloads requiring high availability and disaster recovery.

Price: Starts at \$4,990

(508) 858-2600
www.egenera.com

Product

HP ProLiant DL380 G7



Description

The HP ProLiant DL380 G7 rack-optimized server delivers up to a 20:1 consolidation ratio, reducing floor space and improving data center capacity. Integrating the latest Intel Xeon 5600 processor technology with server management technologies such as HP Insight Control, the HP ProLiant DL380 G7 offers a balanced systems architecture that enables clients to maximize server performance for virtualization, business intelligence, and database workloads.

- Improves management productivity while reducing operational expenses with HP Insight Control software
- Simplifies server setup and power and thermal optimization as well as embedded system-health monitoring to lower administration costs with iLO3 (Integrated Lights-Out 3) Advanced technology
- Optimizes power and thermal management using HP Thermal Logic technology and the "Sea of Sensors" feature, which automatically tracks thermal activity through a collection of sensors placed strategically throughout the server
- Enhances energy efficiency with HP Power Advisor for accurate configurations based on real-time power data to prevent over-provisioning

Best For: Data centers that require increased flexibility and space.

Price: Starts at \$2,429

Contact

(800) 888-0262
www.hp.com

HP ProLiant DL385 G7



The HP ProLiant DL385 G7 server optimizes virtualization, enabling organizations to deploy more virtual machines and maximize the returns on their investments. Based on AMD Opteron 6100 processors, the HP ProLiant DL385 G7 delivers a 27x performance-per-watt increase over previous generations.

- Delivers a 23:1 consolidation ratio, decreasing the amount of virtual servers
- Optimizes power and thermal management using HP Thermal Logic technology and the "Sea of Sensors" feature, which automatically tracks thermal activity through a collection of sensors placed strategically throughout the server
- Reclaims lost data center power and cooling with HP Insight Control and Dynamic Power Capping, which enables customers to cap the server's power use while increasing workload capacity
- Reduces resolution time by 20% with secure remote support for HP servers and storage through HP Insight Remote Support software

Best For: Virtualized environments that require high performance to handle demanding workloads.

Price: Starts at \$2,349

IBM BladeCenter PS700 Express Power7 Series



Available in three configurations—the PS700, PS701, and PS702—the IBM BladeCenter Express Power7 is designed for 64-bit applications. The processor-based blades feature 64GB, 128GB, and 256GB memory options and use Intelligent Cache technology to maximize cache access to each core.

- Consolidates on IBM BladeCenter Power Blades and virtualizes applications to better utilize resources and amplify efficiency
- Simplifies your deployment with flexible configurations that make it easy to implement the right system and the ability to run AIX, IBM, and Linux operating systems simultaneously
- Features an intelligent system design that includes multiple layers of redundancy and reliability combined with advanced availability tools to help you stay up and running
- Helps drive down cost, reduces risk, improves energy efficiency, and enhances flexibility

Best For: Enterprises of all sizes needing high-performance servers that are easy to deploy.

Price: Starts at \$7,088 (PS700), \$9,788 (PS701), or \$18,888 (PS702)

(866) 883-8901
www.ibm.com

PRODUCT SPOTLIGHT

S E R V E R S

This Product Spotlight highlights new server options available from leading manufacturers.

Compiled by Joanna Safford

Egenera Dell PAN System



The Dell PAN System from Egenera is a preintegrated converged infrastructure system that simplifies IT infrastructure and reduces operational costs across both physical and virtual servers, all using industry-standard Dell blades and standard Ethernet. The system reduces the overall I/O component count, simplifies how servers are configured, and reduces complexity needed to provide mission-critical high availability and disaster recovery.

- Comprehensive n+1 high-availability blade failover and disaster recovery for both virtual and physical workloads
- Built-in I/O virtualization and converged networking based on standard onboard Ethernet components
- Failover features eliminate need for complex clustering software

Best For: Production-grade IT and pod-style cloud infrastructures requiring high availability.

Price: Starts at \$99,000

(508) 858-2600
www.egenera.com

Fujitsu PRIMERGY CX1000



The PRIMERGY CX1000 is an innovative scale-out server infrastructure platform designed with centralized power and front-to-top cooling. The sealed back on the racks allows the PRIMERGY CX1000 to be installed in a very small footprint to eliminate the cool aisles in the data center and maximize density. No fans are needed on the servers as the rack handles all the cooling needs with a trademarked top-of-rack Cool-Central fan unit. The servers themselves use the latest Intel Xeon 5600 Series processors and deliver excellent performance.

- Unique scale-out platform delivers 38 servers in an optimized rack
- Centralized server cooling eliminates fans on the servers and lowers energy costs
- Low-footprint rack with vertical cooling uses space more efficiently
- Powerful servers run on dual Intel Xeon 5600 Series processors

Best For: Enterprises that need a platform for cloud, hosting, and high-performance data center applications.

(800) 831-3183
us.fujitsu.com

HP ProLiant DL165 G7



The HP ProLiant DL165 G7 server offers a significant performance boost and enhanced power savings over previous generations. Delivering a 23:1 consolidation ratio, the HP ProLiant DL165 G7 server with AMD Opteron 6100 Series processors increases operational efficiencies, meaning the server pays for itself in as little as two months.

- Delivers a 27x performance-per-watt increase over previous generations
- Optimizes power and thermal management through HP Thermal Logic technology and the "Sea of Sensors" feature, which automatically tracks thermal activity through a collection of up to 32 smart sensors placed strategically throughout the server
- Reclaims lost data center power and cooling with HP Insight Control and Dynamic Power Capping, which enables customers to cap the server's power use while increasing workload capacity
- Reduces resolution time by 20% with secure remote support for HP servers and storage through HP Insight Remote Support software

Best For: Environments where memory capacity and performance are paramount.

Price: Starts at \$1,449

(800) 888-0262
www.hp.com

NEC Express5800/R320a Fault Tolerant Server



The NEC Express5800/R320a FT server provides 24/7/365 availability for your most important applications. This turnkey solution protects critical data during both planned and unplanned outages. NEC customers experience less than five minutes of downtime (with some experiencing zero) per year at a lower TCO over the life of a server compared to traditional clustering solutions.

- Two-socket quad-core Intel Xeon 5500 Series processors deliver fast processing performance
- Five-nines (99.999%) availability to meet the most stringent SLAs
- Operational simplicity with the support of leading operating system providers, including Windows and Red Hat, and support for virtualization

Best For: Companies in need of continuous availability and disaster recovery solutions.

(866) 632-3226
www.necam.com

Supermicro SuperServer 6016T-6RFT+



The SuperServer 6016T-6RFT+ is a powerful iteration of Supermicro's 1U rackmount UIO servers. The 6016T-6RFT+ offers high-performance and green computing features such as increased memory capacity of up to 192GB in 18 DIMM slots, redundant Gold Level (93%+) power supplies, onboard 6Gbps SAS with hardware RAID 5, dual 10 Gigabit Ethernet LAN, and integrated IPMI 2.0 management. Leveraging a variety of UIO adapters, Supermicro UIO systems can significantly improve network throughput as well as application performance.

- The right expansion slot features one PCI-E 2.0 x8 (low profile, 5.5-inch length); the left slot features two PCI-E 2.0 x8 (full height/full length)
- LSI 2108 6Gbps SAS with hardware RAID 5
- Dual 10 Gigabit Ethernet LAN with 2x SFP+ connectors
- IPMI 2.0 plus KVM with dedicated LAN

Best For: Enterprise mission-critical applications, data centers, and HPC clusters that require high-performance, high-density, and fault-tolerant storage solutions.

Price: Starts at \$1,800

(408) 503-8000
www.supermicro.com

Supermicro TwinBlade



As the newest addition to Supermicro's SuperBlade family, the innovative TwinBlade doubles the number of dual-processor compute nodes per 7U enclosure to 20, allowing for up to 120 DP servers per 42U rack for a dense, cost-effective solution. Based on the SBI-7226T-T2 blade supporting the latest Intel Xeon 5600 Series processors, this system delivers unprecedented performance per dollar and per square foot. Available with dual 40Gbps QDR InfiniBand switches, this optimized blade solution also features industry-leading 94% power supply efficiency.

- 20 DP (Intel Westmere and AMD G34) nodes in a 7U enclosure
- 128GB ECC-registered DDR3 per DP node
- Dual 40Gb InfiniBand, 10GbE, and 8Gb FCoE switches
- Dual 1/10Gb Layer 2/3 Ethernet switches
- Centralized remote management via IPMI 2.0 or KVM over IP

Best For: High-performance computing in data center, enterprise, and cloud computing deployments.

(408) 503-8000
www.supermicro.com

Economy, Complex Infrastructures Drive Cloud Server Growth

IDC projects that combined sales of public and private cloud computing-related servers will reach about \$12.6 billion by 2014, according to its "Worldwide Enterprise Server Cloud Computing 2010-2014 Forecast" study. Breaking that number down, IDC predicts the public cloud server market will increase from \$582 million in 2009 to \$718 million in 2014. The private cloud server market, meanwhile, is expected to jump from \$7.3 billion for 2009 to \$11.8 billion by 2014. The report represents IDC's first forecast for cloud computing from a server hardware outlook.

IDC credits the recovering economy, an aging installed server base, and a desire of IT managers to take control of virtual and physical infrastructures as propelling growth in the private and public markets.



Katherine Broderick, IDC research analyst for enterprise platforms and data center trends, says that although all the big vendors are making their play in the cloud computing area, the move toward cloud computing is happening from the "bottom up, as well." One reason is that companies are frustrated with trying to optimize various pieces of their infrastructure and integrating them themselves, she says. Additionally, pushing those chores to a vendor is appealing.

IDC describes public cloud computing as "being open to a largely unrestricted universe of potential users; designed for a market, not for a single enterprise." Private cloud computing is "designed for, and access restricted to, a single enterprise (or extended enterprise); an internal shared resource, not a commercial offering; IT organization as 'vendor' of a shared/standard service to its users."

Public Options More Appealing

Broderick says one surprise surfacing from the study was that public cloud options are more appealing to SMEs than private options. A major obstacle for public cloud growth, however, is security, she says. Broderick says the study also indicates that enterprises that have previously dealt with virtualization are more willing to explore cloud options. Additionally, some larger enterprises with complex infrastructures have a desire to simplify their configurations via a cloud approach, while companies looking to buy their first server or those that have never built their own infrastructure are also eyeing cloud prospects. Overall, cost and complexity are leading motivators for enterprises, she says.

Broderick already has a list of items she plans to further explore in planned updates to this initial report. Because the cloud computing space is advancing so rapidly, she says, update information could arrive in six months rather than IDC's typical annual benchmark for such reports.

by Blaine Flamig

SIX QUICK TIPS

Increase Performance Of Older Systems

Breathe New Life Into Equipment With Components & Software Tweaks

by Bruce Gain

• • •

IT HEAVEN is being able to replace servers and equipment before data center applications take a performance hit due to hardware constraints. An example of data center hell is when an enterprise's business processes come screeching to a halt when outdated equipment can no longer keep up with critical business applications.

However, real-life data center management usually involves scenarios that fall somewhere between these two extremes. For example, instead of taking on huge capital expenditures to replace equipment, it is often possible to make do with older systems through software modifications, component upgrades, and other tweaks. Here are some tips on boosting performance of older systems without breaking the bank.

A Little Memory Can Go A Long Way

Adding newer and more powerful CPUs to workstations and servers can certainly boost computing power, but spending hundreds of dollars per processor for aging machines is usually hardly worth the investment. However, when it comes to memory components, prices have plummeted, and extra RAM can offer immediate performance boosts. "Adding RAM is one of the cheapest and easiest ways to make a computer run faster," says John Matzek, co-CEO of Logic IT Consulting (www.logicitc.com). "You can triple the memory in an old computer for \$20."

Web servers have a "different set of issues with the processing of static and dynamic content," says Joseph Malec, a security analyst and the St. Louis chapter president of ISSA (Information Systems Security Association; www.issa.org). "Because of their [server-specific constraints], having [more] memory is important," Malec says. "This can help to cache static files and process I/O requests more efficiently."

But although adding more memory can generally help to improve performance, it is important to check first to see what the system requirements are for applications to make sure they can benefit, Malec says. "Depending on what [the applications] are, [adding memory] may or may not make a difference," he says.

Keep Spare Components Handy

It is a good idea to keep tabs on the kinds of problems that might plague certain types of machines and equipment in your enterprise. Often, component failures specific to a particular server, workstation, or other type of older equipment that is off-warranty can become common. Visiting industry forums or even using Google to look up particular problems is also a good way to keep tabs on common problems. Once it becomes evident that certain models of aging equipment will likely suffer from specific component failures, it is a good idea to stockpile replacement parts.

Knowing that an enterprise's workstations were prone to suffer from hard drive failures, for example, Matzek says he and his team took action by already having the hard drives in stock when they were needed. "Every day we had two machines when the hard drive died. So we ordered a large box of hard drives and ghosted them with clean installs for the hardware," he says. "So whenever someone called us up with a bad hard drive, we would just put in a spare, and we were good to go. While doing this cost over \$4,000 in components, it was incremental compared to the \$1 million spent on a SAN."

Keep Your Finger On The Hardware's Pulse

When it comes to newer vs. aging equipment, more astute hardware monitoring is required for older servers and infrastructure equipment, especially when performance hits become apparent.

However, closely monitoring and troubleshooting older servers in the data center in order to take the necessary steps to maintain their performance is not always easy, especially with certain kinds of equipment. Keeping older servers up-to-speed, for example, is somewhat more difficult than the process is for aging workstations. "Servers are more complicated and have more dependencies, so identifying issues and improving performance take more expertise. This is because issues can come from hardware, network design, applications, and data load, just to name a few," Malec says. "So, it is best to have a professional analyze the systems and network to determine where the degradation is originating to maximize the investment to improve performance."

Get Rid Of The Junk

Unfortunately, slow speeds and system crashes due to software glitches become more pronounced over time. Although keeping antivirus and antispyware programs running and up-to-date remains critical, unwanted temporary or other duplicated files or unnecessary programs that run in the background can become more bothersome as machines age. So, when making do with older systems, removing software and file "junk" can both boost performance and free up extra capacity on hard drives.

"Removing unused apps from workstations and servers is a sure success," says

Best Tip:

Remove Dust Buildup

Older systems will invariably attract dust over time, and particle buildup on and around equipment can eventually cause system failures of older equipment. "Left unchecked, accumulated dust can cause thermal failure by the premature clogging of filtered devices," says Kevin Vickery, president of ProSource Mission Critical Services (www.team-prosource.com).

Jason Roth, chief technology officer for SET3 (Sterile Environment Technologies; www.set3.com), says one remedy is to rely on professional services for the removal of dust from sensitive components (instead of letting the building super do the job). "Professional data center cleaning can reduce risk of downtime and add longevity to current equipment," Roth says.

Most Practical Tip:

Reinstall The Operating System

Applications are grinding to a halt, and system monitoring shows that superfluous files and unneeded programs are taxing processor resources. But instead of taking the time to remove unwanted gunk from a machine, reinstalling the operating system can do wonders for old systems. "Reloading the existing operating system most of the time makes a significant difference in improving speed," says Haim Sternberg, president and owner of Cherry Systems (www.cherrysystems.com).

Haim Sternberg, president and owner of Cherry Systems (www.cherrysystems.com). "[Target] preloaded apps like antivirus, anti-spam, and similar memory resident apps, which are not used any longer."

For workstations, check the running processes in Task Manager in Windows, Malec says. "There could be unnecessary programs running that are tying up resources. Having standardized builds for computers and limiting a user's ability to load software can mitigate some of this," Malec says. □

BONUS TIPS

Defragment hard drives.

Defragmenting hard drives is one of those things that is acknowledged as a good thing to do but often gets overlooked in busy IT maintenance schedules. However, if hard drives have been in use for a while, chances are there are fragmented files, says Lonnie Laub, a senior technician for Stallard Technologies

(www.stikc.com). "Running a weekly disk defragmentation will keep files used the most on the fastest readable part of the hard drive," Laub says. "This can be easily set up and managed by a domain administrator."

Cannibalize equipment.

Are there spare workstations or servers sitting somewhere?

Old hardware can serve as a gold mine for replacement components. "If you have computers that are dying, then you can cannibalize from them," says John Matzek, co-CEO of Logic IT Consulting (www.logicitc.com). "You can get parts from one and put them into another. Or you can make computers more powerful [with the spare components]."

CLIENTS

THREE QUESTIONS

Unique Solutions For Unique Needs

Tangent Provides Virtualized Desktops, Ruggedized Notebooks & More For Healthcare, Government & Other Challenging Sectors

by Daniel P. Dern

• • •

FOR MANY ORGANIZATIONS, commodity desktop and notebook computers and standard OS provisioning are more than adequate. But for specialized environments such as hospitals; biomedical equipment manufacturers; and educational, industrial, and military institutions, something more is needed, whether it's hardware that can endure tougher conditions or software that can be accessed from anywhere on the network or created on the fly.

Founded in 1989, Tangent (www.tangent.com) has been serving these sectors throughout North America, Europe, and Asia, with customers such as the Chicago Police Department, General Dynamics, and Indiana School Districts. About a year ago, the company began expanding its focus to include enterprise-level as well as smaller and medium-sized organizations, according to Shane Schmidt, Tangent's executive director of enterprise solutions, who joined the company in early 2009.

"We help customers figure out what they need and help customize the solution," he says.

■ **What are the biggest IT-related issues facing today's small to midsized enterprise?**

"Funding—doing more with less," says Schmidt. "People have cash flow problems." It can also be a matter of finding out what financial resources are available. "We work with customers like federal accounts to help them find funding. Even though the federal government is a big entity, people often don't know where to go to get their funding—e.g., an administrator that wants to do a project may not know all of the potential funding sources available."

■ **What should Processor readers know about your company's products?**

Schmidt says Tangent's offerings are engineered specifically for those sectors that are not served by traditional PCs, such

as healthcare, education, industrial, military, and commercial applications. "We focus on the healthcare market, we're really good in education, and we've started a federal team. We carry ruggedized form factors, all-in-one PCs, touchscreens, [and] carts, along with email archival using our flagship DataCove product, plus network security applications, virtualization for server consolidation and VDI (virtual desktop infrastructures), servers, and spam and content filtering services."

At one test site, Schmidt says, "when the test was done, they wanted us to keep our solution there."

Tangent's VDI solution is a match for enterprises of all sizes. "Our typical customer has under 100 seats, but we can do more. Many customers start with a 25-user test and then go to 300 to 400 users, but one customer wants to virtualize 20,000 out of 30,000 desktop users."

Tangent is also starting to do a lot more on the ruggedized front, Schmidt says. "Our TankBook semi-rugged and ruggedized systems are rain/dust/vibration/shock-resistant and have sealed ports, removable 2.5-inch drives, and built-in heaters."

■ **What makes your company unique?**

"We're U.S.-based," Schmidt says. "We have service and sales offices throughout the United States, Canada, Europe, and China, but our headquarters is in Burlingame, Calif., and we do all the assembly and support here in the United States. We have specialized people, like one engineer concentrating on email archiving, another just on VDI."

He continues, "What we're really good at is taking a look at a product and making it better by talking with our customers, like making email archiving from an IT point of view." □

tangent

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Virtual Servers Less Secure?

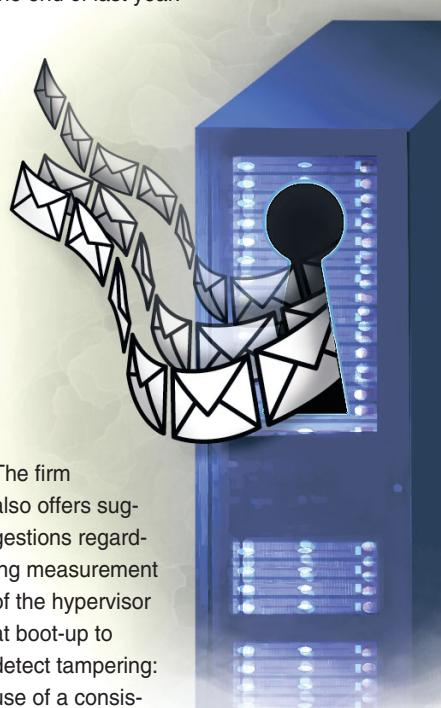
A move to virtualize your organization's servers doesn't have to have a negative impact on data security. Yet according to research firm Gartner, in most cases, it does. In fact, Gartner says that through 2012, about six out of 10 virtualized servers will be more vulnerable to compromise than they were in their physical form. And even by 2015, nearly a third (30%) will continue to be so.

So what is happening? After all, the applications, OSes, and even the hardware may not have changed, so shouldn't all be well from a security standpoint? Not so, says Gartner, because of the addition of a virtualization layer composed of a hypervisor and a virtual machine monitor. If this new layer isn't secured properly, every virtualized workload it touches will be more at risk because of it.

"Gartner is right about [the] hypervisor being an attack vector," says Raj Dutt, CEO of Voxel. "This point may be a major factor in how wary enterprises get of the rampant 'co-tenancy' found in the public cloud."

Fighting Threats

Among Gartner's recommendations to address the security gap is to involve information security personnel early on. It says that information security was not consulted during the architecture and planning stages in 40% of the virtual server deployments extant near the end of last year.



The firm also offers suggestions regarding measurement of the hypervisor at boot-up to detect tampering; use of a consistent virtual and physical security system (with replaceable switch code support) that can monitor communications among virtual machines; enforcement of existing physical trust zone practices in virtual deployments, including separation of VMs from different trust levels; limitation of access to the hypervisor and virtual machine monitor; and use of security that isn't host-based.

By the end of last year, only about 18% of workloads in the data center that could be virtualized had been, Gartner says; more than half will be running in VMs by the end of 2012, however. Clearly, every data center needs to secure its virtual assets as well as it does its physical server installations, or the problem may get worse before it gets better. Of course, there may be more to the story.

"In some ways, virtualization increases security by allowing for different tiers and roles of an application to be split apart to a greater degree than with physical servers," says Dutt. "This can be a net win for security."

by Marty Sems

COVER FOCUS

Ethernet Evolution

Speeds Are Increasing As Demand For Higher Bandwidth Grows

by Holly Dolezalek

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ETHERNET, THE communications technology for connecting equipment to a LAN, is a relatively mature technology. That is, how it works is pretty well-established; the changes now are in how fast it works. And, like most technologies, the more mature it gets, the more commoditized it gets. "The market isn't changing or evolving at this point, but the evolution that is happening is around speed," says Mark Tauschek, lead research analyst for Info-Tech Research Group.

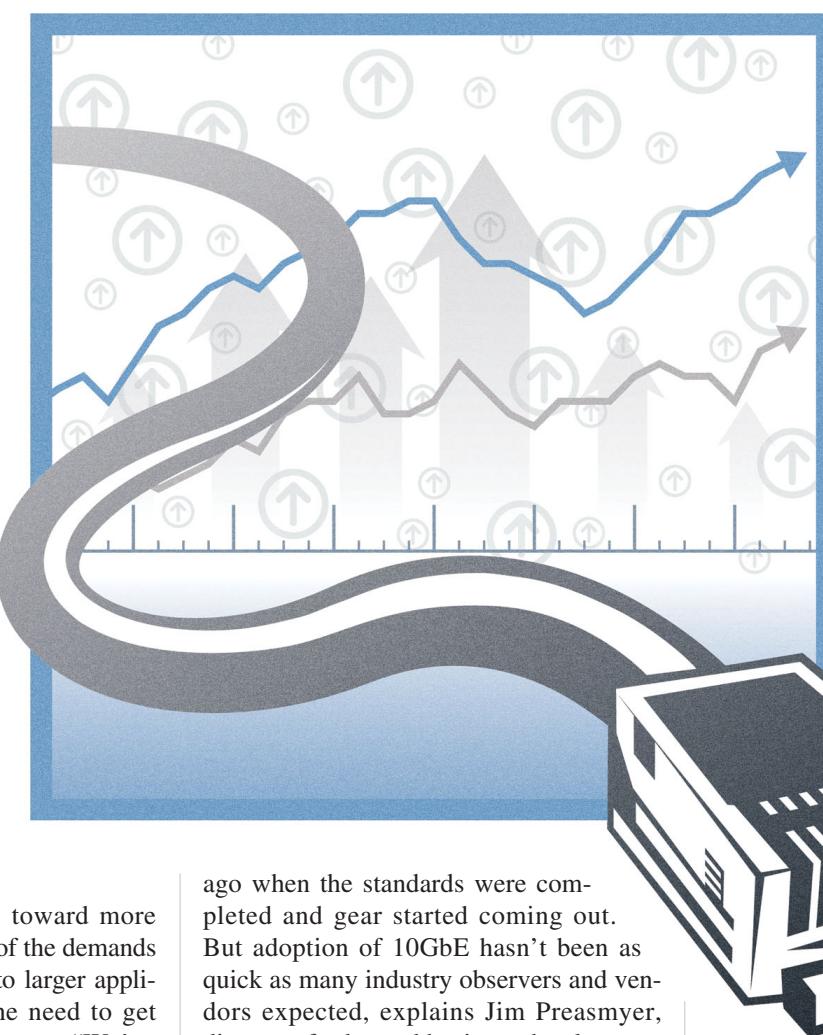
That speed is currently at 10Gbps and may soon climb to speeds of 40 or even 100Gbps. That kind of bandwidth isn't necessary for all companies, of course, and there are plenty that are still happy with their 1Gb Ethernet. But as port prices come down, the attractions of more or faster Ethernet connections are becoming apparent.

The Ethernet Outlook

The trend everywhere is toward more bandwidth, at least in terms of the demands being put on networks due to larger applications, larger files, and the need to get more out of existing equipment. "We've

From 1 To 10

If you've been running 1GbE for awhile and are thinking about 10GbE, don't feel like you're behind the curve. There was a lot of excitement about 10GbE a few years



ago when the standards were completed and gear started coming out. But adoption of 10GbE hasn't been as quick as many industry observers and vendors expected, explains Jim Preasmyer, director of sales and business development for Fujitsu's Advanced Technology Group (www.fujitsu.com).

"The majority of the market is still at 1-gig, and a lot of our clients just want a higher-throughput backbone that goes through that uplink to a 10-gig switch," says Preasmyer, who explains that 1GbE switches with the capability to add 10GbE uplinks are the kind of baby steps that some customers are taking because they're not ready—or don't think they need—to make the switch to 10GbE. Many shops, he explains, are cobbling together a sort of homegrown 10GbE by trunking several 1GbE ports together. "That's fine for some shops, but if you're running video, that means trunking four to eight ports, which means troubleshooting can be difficult and the cabling can be a nightmare," he says. "[Switches with both 1Gb and 10Gb uplinks are] a way for companies that don't need 10-gig everywhere."

For those who are contemplating a full-on migration, it's key to remember that 10GbE is not a drop-in replacement for 1GbE. "When Gigabit Ethernet came onto the scene, within six months, the adapter cards were using a similar cabling structure," says Mellanox's Lee. "But 10-gig isn't physically equivalent, and the cable from server to switch is different."

That's not an insignificant cost, warns Tauschek. But other costs include the NICs (network interface cards) required to get 10Gb performance. If you're running a 1Gb switch, unless that switch has 10Gb

uplink capability, you're going to need a new switch. Some server manufacturers are going to be coming out with gear that has 10Gb capability on the motherboard, Preasmyer says, so depending on the extent of your migration, you may be looking at a pretty big gear overhaul. Additionally, you'll want to think about power issues. 1Gb ports draw more power than 1Gb, and that cost will affect your TCO. "When you're looking at migration, you need to be aware that you might be tripling your power draw," Preasmyer explains.

Tauschek is less convinced that power will be a significant factor, though. "The increase in power draw won't break the bank," he says. "Even the 'non-green' Ethernet switches aren't big power hogs."

Wait For 40GbE?

Because nothing ever stands still for long in technology, 10GbE is already old news, at least from a possibility standpoint. The standards for 40Gb Ethernet will

likely be finished this year, and when that happens, vendors will start to make gear for early adopters. Given the slow ramp-up of 10GbE, though, it's likely to be a few years before 40GbE is anywhere near prevalent.

"The cost will probably be prohibitive at first for most shops, like 10-gig was a few years ago and still is at some levels," says Brian Sparks, senior director of marketing communications at Mellanox. "It's already gone down significantly for 10-gig since its release, and we're probably going to see further declines in price." P

Action Plan

Moving to a higher network speed is not without cost and complexity, so it's important to consider all the factors before you decide to migrate.

For starters, learn about the vendors that offer the level of Ethernet you're considering. Find out about the power draw per port, the cabling options, and the gear—switches, servers, etc.—that you might need to upgrade. But don't feel that you have to go all the way; consider plans to ease into the higher-speed Ethernet with a few ports at first. If you're considering a full upgrade to 10Gb Ethernet, consider upgrades to related equipment that might be available soon, such as servers with 10GbE built directly into the motherboard.

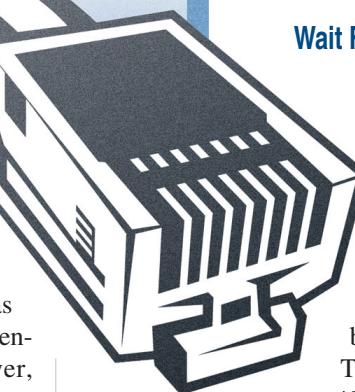
Key Points

- Ethernet as a technology is very mature, and the changes now are mostly in speed; the current top speed is 10GbE, although many shops are still running 1GbE.
- Switching to 10GbE will require NICs, new cabling, and possibly new switches and could mean an increase in power costs.
- Although 40Gb Ethernet standards are close to ready, adoption probably won't start on a broad scale anytime soon.

seen a migration in thought of needing higher bandwidth to coincide with higher-performing servers," says Bill Lee, senior product marketing manager for Mellanox (www.mellanox.com), a provider of connectivity products.

"1Gb Ethernet might be good if you have one physical server with one logical server running on it," explains Tauschek. "But not if you have five or six servers virtualized on a physical server."

The good news is that data center managers who are looking at refreshing their LAN infrastructures have a wider range of options than they did a few years ago. The competition for Ethernet gear has become more intense, and not just with the bigger players; other offerings are coming from smaller companies, as well. "It all means that you can get more bang for your buck, and possibly a lower TCO, in a more competitive atmosphere," Tauschek says.



IT Asset Disposition

Firms Can Help Properly Dispose Of Unwanted Electronics

by Jean Thilmany

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MANY ENTERPRISES are aware of the issues behind IT asset disposition; however, there are quite a few that continue to place their assets in storage and/or throw hardware away with the regular trash. There are safer ways to dispose of assets, and a disposition service provider can help you rid hardware of all sensitive data before you send the devices on their way.

Gavin Manes, president and CEO at digital forensics company Avansic (www.avansic.com), says an enterprise should have a plan in place for disposing of IT hardware it no longer needs. Such a plan will ensure sensitive information does not leave the enterprise along with the hardware, and it will ensure assets are disposed of or recycled in compliance with state mandates.

Many states have enacted laws that dictate how people should dispose of computers, monitors, and other electronic waste. "The laws about e-waste grow

A good firm will provide proof that it disposed of assets in a lawful manner and that it wiped hard drives of all information.

considerably each year," says Cliffie McKay, director of operations at DMD Systems Recovery (www.dmdsystems.com), an IT asset disposition firm.

Enterprise disposition plans should detail working with professional firms to dispose of items an enterprise no longer uses. These firms are familiar with a state's laws and can take care of the hauling and the disposition, whether that means destroying the hardware or wiping it of all contents and recycling it in compliance with state mandates. A good firm will provide proof that it disposed of assets in a lawful manner and that it wiped hard drives of all information, McKay says. Disposition plans that recycle hardware will cost less than those that fully destroy the units and may compensate enterprises for their electronics, letting you recoup some expense for the initial assets, says Brian Musil, founder of Recycle Your Media (recycleyourmedia.com).

What To Look For

When searching for an asset disposition firm, enterprise executives should

determine whether they want their hardware recycled or destroyed. Hard drives and other hardware are cleared of all information before the machine is recycled or disposed of, McKay says. Consider that recycling keeps harmful metals and other solid waste from the waste stream, he adds.

Firms that recycle materials usually refurbish the hardware and resell it on their company's Web site, eBay, or other reseller sites. They also may reuse individual components and sell some and recycle others in an acceptable manner. Many recycling firms will wipe assets before removing the hardware from the enterprise site or upon returning to the firm, depending on need. No matter where this procedure occurs, the firm should provide evidence that it has cleared all data from your hardware.

When researching a firm, be sure to ask for references and look at the firm's certifications. A firm should comply with standards within the ISO 14000 and ISO 9000 families of standards, McKay explains. The former standards ensure environmental management systems minimize environmental impact. The ISO 9000 standards ensure the firm reuses all parts to the best of its ability, McKay says.

If you request that hard drives be recycled, the data asset disposition firm should follow the requirements of DOD-5220.22-M, which involves wiping data a maximum of three times. Sondra Padalecki, senior solutions architect at WorldWide TechServices, explains that software that overwrites the hard drive is used to wipe the drive, rendering the data unreadable. Drives that will not be recycled should be degaussed or smelted, which offers a complete destruction method, she says.

The firm should provide a certificate of destruction for each IT asset, and the certificate should be tied to the serial number of the destroyed hardware. You should receive a report of all destruction activities, as well. Some firms will scan the asset and include a screenshot with the

Save The Info

Before getting rid of old electronics, pertinent enterprises will need to ensure they're retaining any information relevant to lawsuits or to regulatory compliance issues, says Gavin Manes, president and chief executive officer of Avansic (www.avansic.com), a digital forensics firm. IT managers and executives should be aware of what significant information resides on which computers and whether that information can be found on any other IT assets. IT personnel can also make asset disposition easier by configuring centralized storage of email rather than allowing each employee to retain a PST on their own computers, Manes adds.

report and certification to further attest the data has been adequately wiped before recycling, Musil explains.

Many firms may also choose to provide photographic evidence via security camera footage tied to asset serial numbers—verifying that the material has been erased, McKay explains. "All of that can be worked out ahead of time in the contract,"

Key Points

- Many states' laws call for old electronics to be properly disposed of or recycled; an asset disposition firm is key here. Enterprise disposition plans should detail working with professional firms to dispose of items an enterprise no longer uses.
- You can choose to have hardware destroyed or wiped and recycled.
- A good disposition firm will provide evidence (tied to each unit's serial number) that it properly wiped and destroyed or recycled the hardware.

he says. "For instance, it would cost more to dispose of or wipe materials onsite than in our warehouse."

Necessary Documentation

After a firm cleans and disposes of an enterprise's lot in the agreed-upon method, it should send out a report that includes the serial number, manufacturer, description, and condition of each item you turned over to the disposition firm. The report will detail whether the unit was wiped or destroyed. In the event the material is slated for recycling, the report will also include problems the firm found, such as a laptop with a cracked screen originally intended for resell but properly recycled into the waste stream instead.

When looking for a disposition firm, you may also want to check whether it complies with EPA-drafted R2 (responsible Recycling) practices. These were drafted to help enterprises find reliable and responsible disposition firms, explains McKay. It includes 13 general principles and practices for electronics recyclers to follow. You may also want to consider a firm that can inventory materials for disposition should you not have the inventory ready to go.

"Say all the regional offices send their stuff to corporate; there's a lot of work in scanning and inventorying everything and there's an expense in that," Musil says. "You can call vendors that can go to your facility, inventory it for you, audit the value, and tell you the value."

Usually, you can quickly find a good disposition firm, and the inventory is easily cleared, Musil adds. The relief you feel from getting old electronics off your hands in a safe and legal manner is worth the effort. **P**

Community Health Data Initiative Launched

The Department of Health and Human Services recently announced the Community Health Data Initiative. HHS officials aim to provide free public access to an increased amount of government healthcare data. They hope to create a new, innovative way to improve the overall health of Americans. The information would allow individuals to view statistical data related to health, such as cancer rates in a specific area, hospital quality performance, patient satisfaction, and obesity rates. Pilot projects for the initiative have incorporated Web applications, mobile device applications, and social media projects. New datasets would be created for all agencies within HHS.

Apple's iPad Sells 2 Million In First Two Months

In the two months following its April 3 U.S. release, Apple's iPad tablet computing device has sold more than 2 million units, the company says, and that number is expected to increase rapidly following the device's release in select countries overseas earlier this month. Research firms such as Gartner say Apple is on track to sell nearly 8 million of the devices by the end of this year as it continues to expand the iPad's availability in foreign countries. Apple is currently working to keep up with demand, as the average wait time between ordering and shipping is between seven and 10 days.

HP To Cut 9,000 Jobs, Invest In Its Enterprise Services Business



Industry giant HP announced that it plans to invest \$1 billion in its Enterprise Services business in a restructuring effort that will include cutting more than 9,000 jobs. The move is intended to modernize the company's services delivery infrastructure by consolidating data centers and automating processes, providing its customers with faster and more efficient operations. Unfortunately, the automation updates will result in the loss of about 9,000 skilled IT jobs; however, HP plans to fill 6,000 new positions with workers skilled in service delivery and sales. HP's change in workforce echoes the gradual shift in job skill requirements that's happening in the IT industry today.

EU Warns Search Engines About Data Retention

European Union officials say that Google, Microsoft, and Yahoo! are violating European law by keeping detailed search engine user data for too long. The European Commission's data protection advisory body sent letters to the companies saying that their methods for anonymizing such user data as search terms and IP addresses fail to meet EU regulations on data protection. The commission has pressured the search engine companies to shorten their data retention periods to six months since 2007, but the companies still keep some data for up to 18 months. The advisory panel also sent a letter to the U.S. Federal Trade Commission to see if the companies' data retention practices violate U.S. law.

Cisco Leading In Switch Market

According to a report published by Infonetics Research, the Ethernet switch market is on the rebound after suffering heavy losses early in the recession. Specifically, the overall enterprise router market's Q1 2010 revenue is \$4.6 billion, up 41% compared to the first quarter of 2009 and up 12% since last quarter. Cisco has the biggest piece of the pie with a 72.3% market share; HP came in at No. 2, thanks in large part to its recent acquisition of 3Com. Avaya is the next closest competitor following its purchase of Nortel's enterprise assets.

Gartner Report Looks At Data Center Power, Cooling & Space Concerns

With many enterprises already struggling with the power, cooling, and space requirements in the data center, the expected increase in server sales will likely only increase the deployment and management problems. Gartner analysts estimate a CAGR (compound annual growth rate) of 5.5% for server shipments from 2010 through 2014, and if your company is planning on upgrading its servers, there are a few tasks you should do before investing.

Prepare For Growth

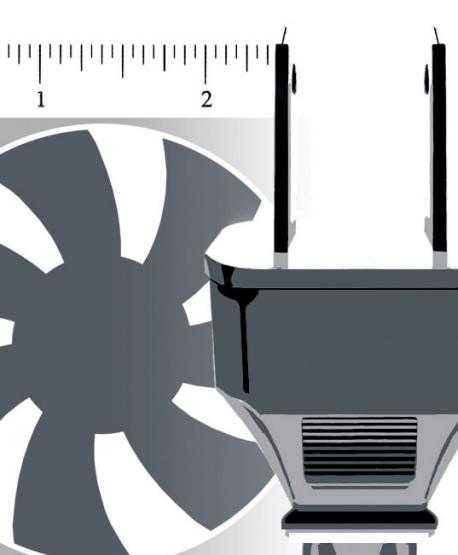
To start, Gartner recommends working with the facility experts within your organization to figure out how the space you currently have—as well as future infrastructure plans—will impact the energy and space requirements of the new servers. Knowing whether you need to minimize space or improve your cooling infrastructure will ensure that necessary tasks can be accomplished prior to implementation.

Gartner points out that using energy-monitoring tools can help you manage and predict your capacity requirements based on current usage. If you're nearly out of power capacity, you'll likely be unable to meet the demands presented by new servers and increased business. Now may also be the time to fully optimize any green or sustainability initiatives in the works. Additionally, Gartner recommends that you accelerate the adoption of any consolidation and virtualization projects that were started before the recession because you won't experience the full energy capacity benefits and floor space savings until after the projects are completed.

Finally, you should consider both the advantages and disadvantages of delaying a new server purchase. For example, you may not need to increase the space needed for new servers if you finish off your consolidation and virtualization tasks. Alternatively, you may want to wait to invest until you have enough funds for a high-end server that uses multiple-core processors for greater capacity or one that offers integrated energy management options.

Accurate models and projections are absolutely necessary to ensure that your enterprise won't be overwhelmed by the costs necessary to cool, power, and store the new servers. And because new servers likely use less energy and offer greater capacity, it may be complex to determine exactly how much physical infrastructure will need to change.

by Nathan Lake



SIX QUICK TIPS

Budget Planning For Data Center Operations

Understand Infrastructure & Equipment Needs When Planning Purchases

by Sixto Ortiz Jr.

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DEVELOPING BUDGET PLANS for data centers is not as simple as figuring out what the laundry list of hardware and software goodies is going to look like for the following year. A number of considerations come into play when planning data center budgets; these considerations have a substantial impact on the level of expenditures required to keep the IT side of the business functioning.

Spending too much results in wasted, underused assets; spending too little can hamper business growth and interfere with day-to-day operations. So, getting the budgeting right is the first, and perhaps most important, step to efficient and effective data center operations. A well-thought-out data center ops budget cycle is the best way to ensure good financial stewardship and cost controls—critical practices in today's tough economy.

Optimize Storage

With today's ever increasing data volumes, storage is a critical piece of data center operations. In terms of budgeting

equipment such as HVAC or power supply units have a very tight relationship. Power is perhaps the most important infrastructure element, because without it nothing runs. Understanding the relationship between operating equipment and the supporting infrastructure is key to unlocking hidden cost savings that can ease the budget planning process and free up dollars for more strategic purchases.

Dr. Ken Uhlman, director of data center business development at Eaton (www.eaton.com), says many data center managers don't know the efficiency of their IT equipment and/or the site power infrastructure and also don't have a clear path in mind for maintaining and improving that efficiency. Uhlman points out there are a lot of easy opportunities to capture energy savings and become "greener" that get overlooked.

For example, administrators should understand the amount of the data center power budget that goes to IT systems and how much goes to support systems. In other words, the key question is determining how much power is consumed for every unit of real business productivity (such as Web pages served or transactions processed). If these analyses reveal glaring inefficiencies, addressing these shortcomings via equipment upgrades can be justified and planned for during the budgeting process.

Another power consideration, says Uhlman, is focused on the principle of building only what is needed and expanding on demand. In the power world, modularity can mean UPSes that scale for added capacity or redundancy, extended battery modules to customize backup runtime, and plug-and-play power distribution components that break down room-level wiring into row- or rack-level modules. The underlying concept is the same: provide a function or process in building-block fashion and enable users to add, remove, or redeploy those building blocks as needed. Understanding and applying this principle provides key inputs into the budgeting process, because it enables administrators to purchase only what is needed at a particular time.

Consider Equipment Pricing

Dealing with vendors can be a tricky proposition, so administrators should understand the negotiating nuances that can keep them from paying too much for equipment. Pricing considerations should thus be worked out in advance of the budget planning process to avoid surprises.

Getting the budgeting right is the first step to efficient and effective data center operations.

for storage, data center administrators must determine how much is too much, how much is too little, and how much is just right to fit current needs yet also provide for future growth. This "sweet spot" is critical to proper budget planning.

Guesswork is never good when it comes to budget planning for storage. Alex Bewley, CTO of Uptime Software (www.uptimesoftware.com), says it is essential to understand how much total compute capacity is getting used and how that capacity trends over time. Administrators should look for tools that show capacity trends, he adds.

"This type of capacity planning is a great way to avoid guesstimating when planning for growth," he says.

Understand Infrastructure Considerations

Data center equipment—such as servers, storage arrays, etc.—and infrastructure

reputable vendors operating in the secondary market offer free one- to two-year warranties on pre-owned equipment purchases.

Buy energy-efficient equipment.

Buying low power consumption equipment saves plenty of money annually, says Steve Suesens, category manager for Staples Technology Solutions (www.staples.com). It's good for the environment in terms of power consumption and lower carbon footprints.

Jess Pugsley, chief operating officer for IT consulting firm Fusionapps (www.fusionapps.com), says all large vendors keep pricing incentives close to the vest. So, Pugsley says, this means administrators only get the best quotes when they tell the vendor or distributor that they are getting something better from a competitor. The reason is, he adds, that real pricing is never

Best Tip:

Develop A Roadmap

Steve Suesens, category manager for Staples Technology Solutions (www.staples.com), recommends that administrators develop a product and services roadmap for the data center that provides insight into the support path for all data center products—from networking to software to hardware—but will also enable the most appropriate purchasing decisions when it's time to upgrade equipment or deploy new systems. This long-term view can pay dividends by enabling informed decision-making throughout multiple budget cycles.

Easiest To Implement:

Network With Resource Groups

One simple task to ease the data center budgeting cycle is to network, says Craig Beible, COO of the ATS Group. There are plenty of resource groups, both online and in local areas, that can help administrators make wise decisions regarding proven technologies as well as the right and wrong ways to implement them, he adds. Choosing the correct path after doing a bit of homework can save time and aggravation by ensuring planned budgets are realistic.

provided up front, even when the vendor is told the best price up front is required.

Pugsley suggests that purchasing personnel advise vendors that they are speaking with other companies and need best pricing up front. Even then, he adds, purchasers should do one round of "I'm going with your competitor," so they can secure the best possible pricing. Naturally, these numbers will feed into the budget planning process, so it is critical to secure these commitments prior to starting the budgeting cycle.

Know What You Have

Steve Suesens, category manager for Staples Technology Solutions (www.staples.com), says administrators should take the time to get price quotes on technologies, projects, services, and other expenses, because prices may have changed since the last procurement round. Also, Suesens recommends that prior to budgeting, administrators perform an IT asset inventory and/or leverage performance monitoring solutions, so the stage of the equipment in its lifecycle can be understood and decisions can be made on purchasing priorities. □

BONUS TIPS

■ Buy used equipment.

Joshua Levitt, managing director at UsedCisco.com, says administrators should consider buying pre-owned equipment, because potential savings can range from 65 to 95% off list price. Also, Levitt says, most

reputable vendors operating in the secondary market offer free one- to two-year warranties on pre-owned equipment purchases.

■ Buy energy-efficient equipment.

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The Analysis Of Expertise

Striking A Balance Between Technical & Business Knowledge

by Christian Perry

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WHETHER A BUSINESS SELLS simple widgets or complex machinery, data center and other IT managers inevitably must bring a wide range of technology expertise to the table. Yet in most data center environments, it's not always feasible to maintain a bank of knowledge about every imaginable technology that a data center might touch. This is particularly true when IT managers find themselves increasingly involved with the business end of their organizations, as this involvement demands a completely different set of expertise.

"Successful IT managers of the future will be part technology and part business people," says Scott Archibald, managing director with Bender Consulting. "They will be a hybrid, and their career paths could lead them to and from operations, marketing, or other corporate positions that were unheard of for an IT manager only five years ago."

IT managers need to be able to gauge the importance and relevance of business knowledge. What technologies should they focus on for the benefit of the data center and other areas of IT? How do those technologies relate to the business? Identifying those factors and effectively applying this expertise to the role of IT manager has become a top priority in today's dynamic environments—and a challenging one.

Targeting Tech

Most IT managers are intimately familiar with the technologies and trends that work for their environments, but it never pays to operate on an island, because there could always be something out there that improves performance, security, or even the business in general. Matt Pollard, director of advisory services at Forsythe

Solutions Group (www.forsythe.com), recommends specific strategies for staying on top of the latest technologies.

Key Points

- IT managers should take advantage of conferences, seminars, industry trade publications such as *Processor*, and other peer sources to keep on top of the latest technologies that could prove useful for their environments.
- Knowledge of technologies and strategies required for daily operations is obviously important, but it's also worthwhile to investigate advanced technologies such as virtualization, cloud computing, and others.
- Gathering as much business intelligence as possible is critical for IT managers to understand how their environments can provide the best return for business goals.

"Industry conferences and IT association seminars are effective means to stay aware of the latest trends. IT managers should also periodically compare how technology is being used in their environment against industry standards in order to revalidate their existing technologies and identify potential alternatives to consider," Pollard says.

Archibald adds that IT managers can't understand or even know all the technology that's available today. As a result, it becomes more critical for the managers to rely on their staff and work in coordination with their peers (through conferences, peer groups, trade publications, and other external resources) to obtain a working grasp on the right technologies for their company. After all, he says, successful IT managers need a fundamental grasp of a

given technology to understand both its opportunities and limitations.

Data center and IT managers can easily become mired in run-of-the-mill technologies that are critical for the day-to-day operation of their environments, but they still need expertise beyond common areas such as networking and WAN Internet lines, says Lior Blik, CEO of NITHealth and CIO of Hoboken University Medical Center. In particular, knowledge of advanced technologies, such as virtualization and cloud computing, can help managers stay on the cutting edge.

Closing The Business Gap

Along with that knowledge of cutting-edge technologies, IT managers can be well-served by understanding at least some of the intricacies of the business world. In fact, Blik says he believes there is never enough business know-how and that IT managers should have both industry-specific business knowledge and general business intelligence that can help clients make effective decisions.

"For every problem there is a solution, but there's also a cost factor that needs to be considered and then managed. Business-savvy managers can help and advise clients as they seek to contain costs as a main priority to any project. When managers have a business mind, they can impact business development by increasing value to the organization and its revenue. By understanding clients' needs from a business perspective, it makes it easier to not only keep clients, but keep them happy. It's all about looking beyond just IT," Blik says.

To help manage and measure the value the IT organization brings to the business, Pollard recommends that IT managers use process management frameworks and control objectives. He also notes that it's crucial for IT managers to develop an

The Door Swings Both Ways

An overriding trend in recent years has seen IT managers becoming more involved with the business end of their organizations so they can more accurately assess the effectiveness of their technology and overall IT strategy. But according to Chris Herndon, chief technologist at MorganFranklin (www.morganfranklin.com), the mentality that IT managers are solely responsible for bringing new technology to the business table needs to change.

"IT managers are very focused on technology that makes their life better, easier, and faster, with managers then purchasing these technologies and recommending them to others," Herndon says. "Oftentimes, though, their IT decisions don't benefit the business involved in meeting its larger goals. Expensive features sit idle and require additional maintenance and time on behalf of the IT manager. Instead, IT managers should truly examine how to develop the enterprise. What's the most effective approach? Stay ahead of the curve and collaborate with your business leaders. IT improvements should not be the goal; they should be the tool to the business result."

Herndon says that both the IT and business sides should understand what the company sells and provides. Because IT managers must represent the strategic vision of the company's leadership, a good relationship with the business directors is crucial. However, it's not just up to IT managers to harness a certain amount of business know-how, because CEOs must also realize and understand that IT managers will help to create and move processes in addition to running the organization's IT systems. As a result, it's imperative that CEOs include IT managers in their executive planning, he says.

understanding of how to leverage computing convergence to establish a flexible, standards-based infrastructure. This route, he says, will help managers more effectively support growth and changes in the business.

"IT managers should be knowledgeable enough about the business to speak in business terms with regards to proposing benefits of, or resolving issues with, the use of technology," Pollard adds. "It's as simple as talking—and listening—to the business managers to learn about their key processes and priorities." □



Processor Solutions Directory

Here are brief snapshots of several companies offering products designed for the data center and IT industry. Listings are sorted by category, making it easy for you to find and compare companies offering the products and services you need.

You can find more detailed information on these companies and the products they offer inside this issue.

To list your company and products, call (800) 247-4880.

PHYSICAL INFRASTRUCTURE



Adder, the experts in connectivity solutions, has specialized in global and local computer connectivity since 1984. As a leading developer and manufacturer of KVM switches, video and audio extenders, KVM-over-IP devices, and remote management solutions, Adder gives IT professionals the tools they need to manage networks and enable distributed remote control anywhere in the world.

Products Sold:

- KVM and KVM-over-IP switches and extenders
- Management software
- Cables and accessories
- Rackmount kits

(888) 932-3337 | www.adder.com

PHYSICAL INFRASTRUCTURE



AVTECH Software, founded in 1988, is focused on making the monitoring and management of systems, servers, networks, and data center environments easier. AVTECH provides powerful, easy-to-use software and hardware that saves organizations time and money while improving operational efficiency and preparedness. AVTECH products use advanced alerting technologies to communicate critical status information and can perform automatic corrective actions.

Products Sold:

A full range of products that monitor the IT and facilities environment, including temperature, humidity, power, flood, room entry, and UPS

(888) 220-6700 | www.AVTECH.com

PHYSICAL INFRASTRUCTURE

BayTech was founded in 1976 and, since the 1990s, has developed unique products for remote power management. The company uses printed circuit board instead of wires for a better, more resilient connection between the data center equipment and the receptacle. BayTech provides an extensive Web site with brochure downloads, warranty information, and reseller support and also offers evaluation units for data centers.

Products Sold:

- Power control, distribution, management, and metering
- Power transfer switches
- Console management and remote site management

(800) 523-2702 | www.baytech.net

PHYSICAL INFRASTRUCTURE

The MovinCool division of DENSO Sales California has pioneered the use of portable air conditioning solutions for a variety of North and South American markets since 1982. MovinCool works with a national network of distributors and suppliers to provide product sales, installation, and rental.

Products Sold:

- Office Pro Portable Air Conditioner Series for indoor environments such as server and telecom rooms
- Classic & Classic Plus Portable Air Conditioner Series for moisture removal, outdoor and industrial spot-cooling
- CM Series ceiling-mounted A/C for cooling server rooms, telecom closets, or anywhere space is limited

(800) 264-9573 | www.movincool.com

PHYSICAL INFRASTRUCTURE

Server Technology is committed to the PDU market with the largest group of engineers dedicated to power distribution and other solutions within the equipment cabinet. Advancements in device power monitoring help data centers monitor and improve their efficiency, and continuous research and development is fueled by companies that look to Server Technology for their custom cabinet power solutions.

Products Sold:

- A complete line of cabinet PDUs, including Per Outlet Power Sensing (POPS), Rack Mount Fail-Safe Transfer Switch, Console Port access with remote power management, Switched, Smart, Metered, Basic, and -48 VDC

(800) 835-1515 | www.servertech.com

NETWORKING & VPN

Apposite Technologies was founded in 2005 with a mission to make application testing ubiquitous. The company provides IT professionals with easy-to-use, professional-level WAN emulation tools that simulate network bandwidth, delay, loss, congestion, and other impairments to test how applications will perform under real-world conditions. The company's products are in use globally among enterprises, application and equipment vendors, telecom carriers, testing labs, and government and military organizations.

Products Sold:

- Professional-level WAN emulation appliances aimed at benchmarking application performance across WANs

(310)477-9955 | www.apposite-tech.com

Processor.com**PHYSICAL INFRASTRUCTURE**

Cyber Switching began pioneering power distribution technologies in 1994. Our PDUs are used to power cycle and manage power to blade servers, routers, SANs, and other data center equipment. Our intelligent PDUs can monitor current individually by outlet and also provide virtual circuit breaker protection on an individual outlet basis. **No other PDU on the market offers these unique features.**

Products Sold:

- Intelligent power management
- Value-added power management
- Metered power distribution
- Three-phase power distribution
- Energy management and control
- Switches
- Patch Panels

(888) 311-6277 | www.cyberswitching.com

PHYSICAL INFRASTRUCTURE

Established in 2008, PDUsDirect.com is an online wholesaler providing a select line of PDUs for server and networked environments. PDUs Direct's basic, metered, and switched Rack PDUs provide local and remote power management, power monitoring, and environmental monitoring. We pride ourselves in offering industrial-grade quality products at the lowest prices, with the fastest shipping (most orders shipped within 24 hours) and simplest purchase process.

Products Sold:

- A complete line of 20A PDUs, including metered, basic, and switched.

(888) 751-7387 | pdusdirect.com

PHYSICAL INFRASTRUCTURE

Founded in 2001, Upsite Technologies has established itself as a leader in the marketplace for high-availability data center solutions, concentrating on hot spots and energy-efficiency issues. Upsite founder Kenneth G. Brill recognized a need for products and solutions reaching far beyond standard engineering and consulting offerings. Upsite has developed a suite of products designed to increase the reliability and availability of data centers while reducing energy costs.

Products Sold:

- A line of products designed to solve heat-density problems in data centers, including blanking panels, temperature strips, and raised floor grommets to seal cable openings.

(505) 982-7800 | www.upsite.com

NETWORKING & VPN

Black Box is the world's largest independent provider of voice communications, data infrastructure, and product solutions. Shop at Black Box for 118,000+ networking products, a best-price guarantee, and FREE, live, 24/7 Tech Support.

Products Sold:

- Cabinets and racks
- Cables
- Datacom
- Digital signage and multimedia
- Industrial
- Infrastructure hardware
- KVM
- Networking
- Power
- Premise security
- Servers, storage, and PCs
- Voice communications

(877) 877-2269 | www.blackbox.com

PHYSICAL INFRASTRUCTURE

Based in New York City, Hergo Ergonomic Support Systems is an independent designer and manufacturer of enclosure cabinet solutions, technical computer furniture, and modular racking systems. The company's products are designed to promote organization in the workspace and to increase the productivity of computers, peripherals, and communications equipment. Hergo is known for its high-quality products and superior customer service.

Products Sold:

- Racks
- Enclosures/cabinets
- Motorized workstations
- Flat-panel arms
- Computer desks
- Cable management
- Power management

(888) 222-7270 | www.hergo.com

PHYSICAL INFRASTRUCTURE

Rackmount Solutions' mission is to listen to the IT engineer's specific needs and deliver superb-quality, high-performance products through continuous product innovation and operational excellence. We pride ourselves in providing quality customer service, products that fit your IT requirements, and solid value for your money.

Products Sold:

- Wallmount and server racks and cabinets, including sound proof, air conditioned, and large cable bundle
- Desktop/tabletop portable racks
- Shockmount shipping cases
- Bulk cable

(866) 207-6631 | www.rackmountsolutions.net

NETWORKING & VPN

ASD's mission is to be the best nationwide provider of design, deployment, and project management services in the voice and data network integration industry. We offer turnkey, reliable, and cost-effective communications systems tailored to fit the client. Our goal is to be the single point of contact for services to end users, systems integrators, manufacturers, building owners, and others. Our commitment includes delivering projects on time and on budget and offering superior, customized design.

Products Sold:

- Voice and data network integration services, along with a line of networking-related products.

(800) CABLING (222-5464) | www.icat-its.com

NETWORKING & VPN

GoToAssist® Express™ lets you easily view and control your customer's computer online, so you quickly resolve their technical issues. You'll amaze customers by solving problems on the spot while reducing travel time and lowering support costs. GoToAssist Express is brought to you by Citrix Online, a fast-growing division of Citrix Systems. Every month, more than 15,000 new customers start using Citrix Online's services to work from anywhere with anyone—using remote-connectivity tools to save time, get more done, and connect to others around the world.

Products Sold:

- GoToMyPC, GoToMeeting, GoToAssist, and GoToWebinar.

(800) 549-8541 | www.gotassist.com/processor

NETWORKING & VPN



The Network Management Division of Ipswitch, Inc. is the developer of the WhatsUp Gold suite of innovative IT management software. WhatsUp Gold delivers comprehensive network, system, application, virtual resources, network traffic, and log file monitoring and management solutions for small and medium-sized businesses and enterprises. Ipswitch, Inc.'s Network Management Division is headquartered in Lexington, Mass.

Products Sold:

Network management solutions for automated discovery, mapping, real-time monitoring, alerting, troubleshooting and reporting.

(781) 676-5700 | www.whatsupgold.com

STORAGE



InMage develops disk-based business application recovery solutions for both physical and virtual machine environments. The company's integrated recovery software supports local and remote backup and disaster recovery and application availability, performing exceptionally well in heterogeneous IT infrastructures with mixed platforms and storage.

Products Sold:

Disk-based recovery platforms for backup, disaster recovery, and application recovery

(800) 646-3617 | www.inmage.com

SECURITY



Based in Mahwah, N.J., but with offices around the world, Radware is known for its application delivery solutions and its network security products. Its goal is to minimize IT and infrastructure costs, as well as losses sustained in malware-inflicted downtime, in order to preserve productivity and profitability for your business. To this end, Radware endows its products with multiple integrated capabilities along with accelerated processing power.

Products Sold:

- Application delivery
- Application and network security
- Real-time intelligence
- Management and monitoring

(877) 236-9807 | www.radware.com

Processor.com

NETWORKING & VPN



Hemoco Software is a Belgium-based software developer that specializes in creating affordable but high-quality, sophisticated software aimed at securing individual Windows systems and providing IT admins with an agent-free method to inventory hardware, network, and software on Windows-based networks. The company's products are used by thousands of companies globally, and Hemoco encourages users to test its products via the freeware versions it provides to discover exactly what its tools are capable of.

Products Sold:

- Free scanning software that analyzes running programs, startup locations, services, drivers, and other points within Windows systems that malware can launch from
- Automated hardware, software, and network inventory software for Windows networks

lansweeper@hemoco.com | www.hemoco.com

STORAGE



RecycleYourMedia.com is concerned about the destruction of our environment caused by e-waste. We realize there needs to be a solution that is ecologically sensible, technologically reliable, and economically viable. The answer is to sell us your new, used, or even obsolete media. Your sensitive data is secure and destroyed with manufacturer-approved processes and equipment, and you will also be supplied a Confidentiality Agreement on request. It's easy to recycle your data cartridges with RecycleYourMedia.com.

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(877) 798-2737 | www.recycleyourmedia.com

NETWORKING & VPN



Sterling, Va.-based Simena specializes in network monitoring and testing solutions. The company has been in the business of meeting multiuser and multisite environment customers' needs for low-latency wire-speed products since 2002. Simena has clients in more than 30 countries and takes pride in the solutions its experienced network engineers develop and the patent-pending technologies that power its innovations.

Products Sold:

- Packet flow switches
- Network emulators
- Traffic generators
- Network taps

(571) 323-1500 | www.simena.net

SECURITY



the network security company™

Using patent-pending application-identification technologies, Palo Alto Networks reinvented the network firewall to provide companies unequalled visibility and control over the applications and related data coming into and out of company networks. Without negatively impacting performance, Sunnyvale, Calif.-based Palo Alto Networks' firewalls can identify and categorize over 950 applications and enforce access policies on a per-user or per-group basis. These firewalls also have integrated IPS and provide content scanning to defend against modern threats to the enterprise.

Products Sold:

PA-4000 series, PA-2000 series, and PA-500 next-generation firewalls, with throughput up to 10Gbps.

(866) 320-4788 | www.paloaltonetworks.com

SECURITY

CLIENTS



Maryland-based dtSearch started research and development in text retrieval in 1988. The company is known for speedy adoption of new programming standards, OSes, and file types. Plus, it has a flexible licensing model. Typical corporate use of dtSearch includes general information retrieval, Internet and intranet site searching, and email archiving and email filtering.

Products Sold:

Text retrieval products, including:

- | | |
|-----------------------|-------------------------|
| • Desktop With Spider | • Web With Spider |
| • Network With Spider | • Engine For Win & .NET |
| • Publish For CD/DVDs | • Engine For Linux |

(800) 483-4637 | www.dtsearch.com

EQUIPMENT DEALER



At Information Technology Trading, our goal is to help you acquire the right hardware or software solution. We specialize in purchasing and reselling data-processing equipment and have more than 21 years combined experience. We provide services and system upgrades, DASD, communication, and memory. We're also an outlet for off-lease portfolios.

Products Sold:

- AS400, Advanced System/36, R/S6000, ES/9000, and PC systems (including lease and rental)
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- Services, including system design and installation, maintenance, and buyback of existing hardware

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EQUIPMENT DEALER



In 1987, Pegasus Computer Marketing started providing mainframe products to the end-user market. What began as a sales-only organization soon adapted to offer in-house repair and refurbishment. During the past 10 years, Pegasus has focused primarily on the point-of-sale and barcode industries, buying, selling, and providing service contracts for anywhere from a few scanners to hundreds.

Products Sold:

We buy, sell, and service:

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